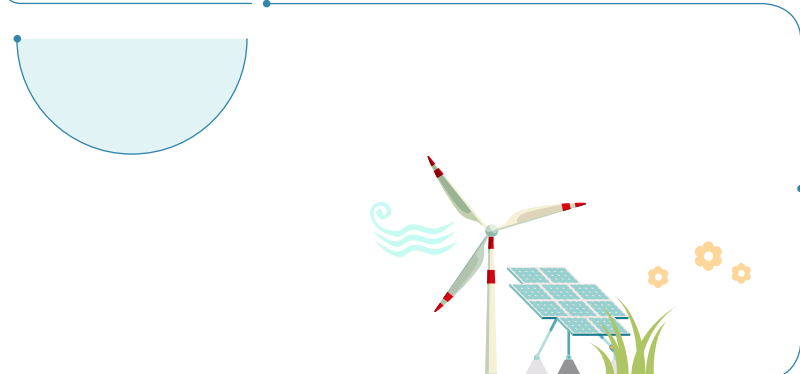


BEYOND ENERGY, CREATE HAPPINESS

2020 SUSTAINABILITY REPORT



Energy Company Creating
People's Happiness
KOREA WESTERN POWER



ABOUT THIS REPORT

Korea Western Power (KOWEPO) has published annual sustainability reports since 2006 to disclose its business results, achieved through sustainable management, to stakeholders in a transparent manner. This 2020 Sustainability Report covers the sustainability management strategic system, implementation details and outcomes, and future plans that focus on economic, environmental, safety, social responsibility, and corporate culture issues. Quantitative performance is based on data from a three-year period (2017~2019) in order to show changing trends.

Reporting Standards GRI 102-54

Report is according to GRI (Global Reporting Initiative) Core Standards

Reporting Scope GRI 102-46

Korea Western Power Head Office and four domestic operation sites (Taeon, Pyeongtaek, Seoincheon, Gunsan), overseas operation site

Reporting Period GRI 102-50

From January 1, 2018 to December 31, 2019 (including performance of the first half of 2020)

Reporting cycle GRI 102-51, 102-52

Reporting every other year (Previous report published : September 2018)

Validation of the Report GRI 102-56

Independent third party verification (Verification agency : Korea Management Registrar)

Inquiries GRI 102-53

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CEO Message GRI 102-14



“
 With heart set on being the best,
 KOWEPO will continue taking on
 challenges to become a global leader
 in sustainable management. ”

August 2020
Kim Byung-sook
 President & CEO of Korea Western Power Co., Ltd.

Dear stakeholders,

As a public energy company, Korea Western Power (KOWEPO) is deeply committed to contributing to national economic development and to people's happiness through our mission, which is to supply high-quality electricity in a stable and economical manner. As a power-generating public corporation that enriches people's lives, KOWEPO strives to fulfill its economic, social and environmental responsibilities, and is faithfully implementing international norms and principles for sustainable management and growth. By publishing the 8th Sustainability Report in 2020, KOWEPO is committed to informing our stakeholders of the company's sustainability management performance and make the following commitments for further growth.

● ● ● **KOWEPO will supply stable and economical electricity**

KOWEPO considers the stable and economical supply of high-quality power as its most basic responsibility. KOWEPO has achieved the highest level of facility reliability by enhancing the operating capabilities of its power-generation facilities, strengthening collaboration with experts, and introducing new technologies based on deep learning. KOWEPO has made diverse efforts to faithfully fulfill its basic responsibilities in this respect, such as by improving economic efficiency and stabilizing supply and demand management of bituminous coal through efficient operation at all stages of the fuel supply and demand.

● ● ● **KOWEPO will lead the eco-friendly energy business**

KOWEPO has established a 'New & Renewable Energy 3025 Roadmap' to focus on enhancing competitiveness in the new and renewable energy sectors, such as solar power, wind power, and fuel cell businesses. KOWEPO is also leading the development of eco-friendly hydrogen energy by securing the basis for commercialization of hydrogen for the first time in Korea. In addition, to reduce greenhouse gas emissions, KOWEPO will conduct business in an eco-friendly manner by expanding UN-approved external reduction projects concerning agriculture, forestry, SMEs, and buildings. In order to reduce air pollution, KOWEPO will proactively implement fine dust reduction measures that have been tailored to meet the characteristics of each power supply, as well as increasing the recycling of the by-products of power-generation.

● ● ● **KOWEPO will prioritize safety-first management**

KOWEPO made safety the top priority in management and established a safety-first management business system. In addition, the company strives to make safe workplaces for on-site workers by continuously inspecting high-risk areas, quickly removing on-site risk factors, prohibiting unskilled workers from working alone, and establishing a smart safety management system based on the 4th industrial era technologies. KOWEPO will continue to overcome various safety-management related limits and create an even more advanced safety system so that KOWEPO can be the safest power plants in Korea.

● ● ● **KOWEPO will create happiness for people by actualizing various social values**

KOWEPO is committed to contributing to the development and inclusive growth of the community. KOWEPO does this by actively utilizing its competence and resources. In particular, KOWEPO actively implements job-oriented management to create decent jobs, promote localization of generator materials to expand mutual growth with SMEs, develop business models to revitalize the local economy, and implement community-based social contribution programs that conforms to the needs of the local community. By doing so, the company will create happiness for people by creating various social values.

KOWEPO hopes that this Sustainability Report containing the commitments of KOWEPO in 2018-2019 becomes a communication channel that enhances trust and expectations of stakeholders, and we look forward to your continued interest and encouragement.

Thank you.

PART

01

INTRODUCTION

08p



Company Introduction

10p



Major Business Performance

12p



Business Introduction

20p



Sustainable Value-Creation Process

KOWEPO is a public energy company that creates happiness for people and realizes sustainable development through stable and economical supply of power.

Company Introduction

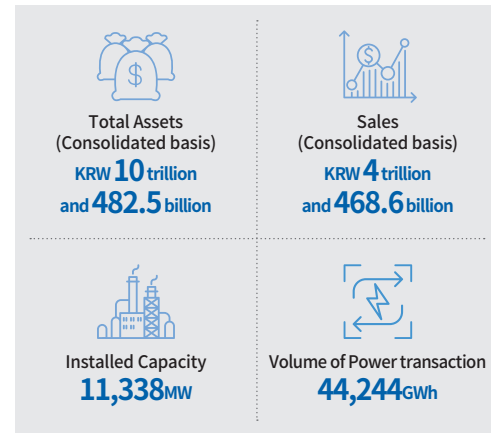
GRI 102-1, 102-2, 102-3, 102-5, 102-7, 102-10

KOWEPO is a public corporation specializing in power generation established with the aim of contributing to the sound development of the power industry. KOWEPO does this by enhancing the competitiveness of the power industry and improving the service level for electricity users. With the vision of 'Beyond Energy, Create Happiness', KOWEPO supplies high-quality electricity in a stable and economical manner to create happiness for people and to practice sustainable development.

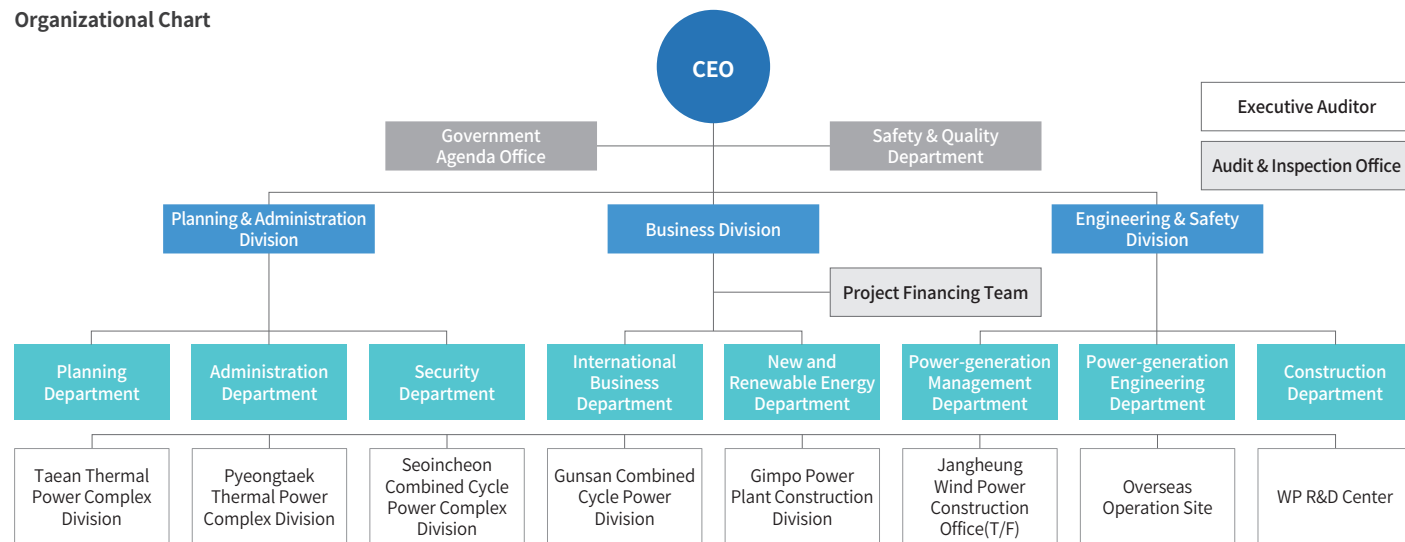
Company Overview

Company Name	Korea Western Power Co., Ltd.
Corporation Type	Joint-stock Company
Date of Establishment	April 2, 2001
CEO	Kim Byung-sook
Address of Headquarters	285, Jungang-ro, Taeon-eup, Taeon-gun, Chungcheongnam-do, Republic of Korea
Main Business Domain	Electric Power
Total Capital	KRW 3 trillion and 838.1 billion
Shareholders	Korea Electric Power Corporation 100%
Number of Employees	2,505

(As of December 31, 2019)

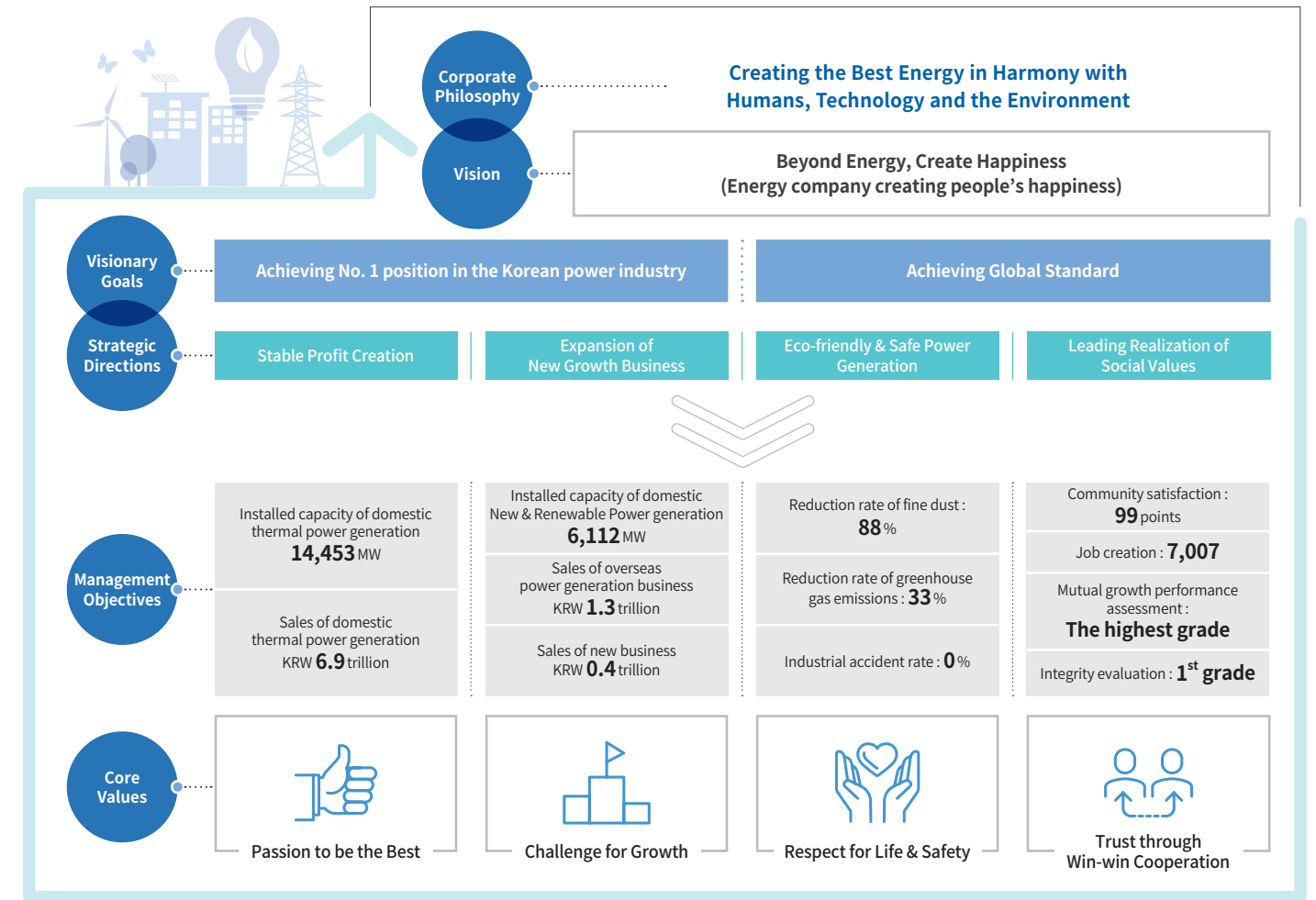


Organizational Chart



KOWEPO Vision 2030

In supporting people's everyday lives with a stable power supply, KOWEPO has established the 'KOWEPO Vision 2030' in order to preemptively respond to changes in the external environment and market conditions, and to ultimately create happiness for people. KOWEPO is committed to laying the foundation for the stable and economical supply of energy to the people — and furthermore, to creating a sustainable future by generating the best- quality energy through harmonization among humans, technology, and the environment.



Major History



Major Business Performance

GRI 102-10



Laid the foundation for the commercialization of hydrogen production for the first time in Korea

November 2019



「United Nations Framework Convention on Climate Change-Conference of Parties」 Announced best practices for greenhouse gas reduction

December 2019



Achieved an industrial accident rate of 0.05% lowest in the power-generation industry, lowest to date

2019



Korea Social Innovation Change Maker Hosted Awards Ceremony

December 2019



Created Sustainability Management Value

※ Reference : 104-105p



The 4th Industrial Revolution Conference at the National Assembly Awarded Smart Enterprise Leader

August 2019



Eco-friendly Management Grand Prize Awarded Grand Prize

July 2019



Hosted roadshow for localization of generator materials for the first time among public corporations to support new SMEs

October 2019



Job Creation Exemplary Management Prize of Korea awarded Grand Prize for jobs created for the socially and economically vulnerable

September 2019



Business Introduction

GRI 102-2, 102-4, 102-6

Power Generation

Taeon Thermal Power Complex Division



Pyeongtaek Thermal Power Complex Division



Seoincheon Combined Cycle Power Complex Division



Gunsan Combined Cycle Power Division



Heart of KOWEPO

The Taeon Thermal Power Complex Division is the core power-generation complex of KOWEPO. It is a thermal power plant responsible for 6,470.8MW or 57% of the company's generation facility capacity and is equipped with cutting-edge automatic control facilities. For the first time among domestic power plants, KOWEPO acquired ISO14001 (Environmental Management System) certification, as well as the ISO14001 and ISO9001 (Quality Management System) certifications. As an energy leader opening up the era of the West Coast, this power complex, located on a 4.6 million m² site to the side of the beautiful Taeon Coastal National Park, is producing clean energy through eco-friendly power plant operations.

The largest hub power plant in the metropolitan area

The Pyeongtaek Thermal Power Complex Division has contributed significantly to the development of the national power industry through stable power-generation, with the completion of the first power-generation unit in 1980. It is the largest hub power plant in the metropolitan area with a total 2,280.2MW of power-generation capacity, including 1400MW of steam power and 869MW combined cycle power. Possessing both steam power generation and combined power generation facilities that use natural gas, this power plant is being reborn as an eco-friendly plant equipped with technology and environmental facilities (DeNox facility) that are world-class in the facility operation sector.

Exemplary Model of Green Power Plant

The Seoincheon Combined Cycle Power Complex Division is an eco-friendly power plant that uses clean fuel derived from natural gas, generating almost no air pollution. It continues to be an exemplary model of an eco-friendly power plant as it is equipped with a state-of-the-art facility that can quickly start and stop gas turbine generators, allowing it to immediately respond to changes in power demand. Located on a site of 310,000m² next to Yeongjong Bridge, the gateway to Incheon International Airport, the Seoincheon Combined Cycle Power Complex Division was established in November 1992 with a low construction cost of approximately KRW 500,000 per 1 kW. It was also awarded the 'Power Plant of the Year' award from EPI, the U.S. prominent power-generation magazine.

Park-type power plant serving the local community

Since the decommissioning of the Gunsan thermal power plant in 2004, the Gunsan Combined Cycle Power Division launched an eco-friendly, combined cycle power plant equipped with cutting-edge power generation facilities on the same site in 2010. Although it was built in a densely populated area within the city, it is regarded as a leading example of urban-type power plants through its use of strict environmental management and clean fuels to solve environmental issues, as well as through the creation of an open theme park for the enjoyment of local residents. In addition, it is the first location in Korea to apply the new G-class gas turbine, providing the highest power-generation efficiency and supplying electricity to more than 30% of users in the Jeollabuk-do region - with a total capacity of 751.6MW.

Year of Completion 1995 ~ 2018	Installed Capacity Thermal Power 6,100.0MW New & Renewable Energy 370.8MW
Power-generation fuel Bituminous coal (coal), Small hydro power, Solar power	No. of Units Thermal Power 10 units New & Renewable Energy 11 units

Year of Completion 1980 ~ 2018	Installed Capacity Thermal Power 2,268.5MW New & Renewable Energy 11.7MW
Power-generation fuel LNG, Solar power	No. of Units Thermal Power 5 units New & Renewable Energy 7 units

Year of Completion 1992 ~ 2020	Installed Capacity Thermal Power 1,800.0MW New & Renewable Energy 57.9MW
Power-generation fuel LNG, Fuel cell, Solar power	No. of Units Thermal Power 8 units New & Renewable Energy 6 units

Year of Completion 2010 ~ 2017	Installed Capacity Thermal Power 718.4MW New & Renewable Energy 33.2MW
Power-generation fuel LNG, Solar power, Wind power	No. of Units Thermal Power 1 units New & Renewable Energy 6 units

Business Introduction

New Construction

Gimpo Combined Heat & Power Plant



As KOWEPO's first collective energy project to provide a stable supply of electricity and heating to the Metropolitan and Gimpo areas respectively, the Gimpo Combined Heat & Power Plant is currently under construction with expected completion by June 2023. The plant has a generation capacity of 510MW in terms of electricity and 281 Gcal/hour in terms of heating. When it is in operation, the plant will supply electricity and heating energy to 500,000 and 70,000 households respectively in the Metropolitan and Gimpo areas.

Jangheung Wind Power Plant



KOWEPO plans to increase the rate of new and renewable energy generation to more than 25% by 2030 in order to comply with its RPS¹⁾ acquisition plan, as well as the government's energy transition and Green New Deal policies that aim to expand the use of low-carbon green energy. The construction of Jangheung Wind Power Plant will be completed by July 2021 in the Jangheung area, Jeollanamdo. When the power plant is completed, it will contribute to reducing carbon emissions and provide a stable power supply.

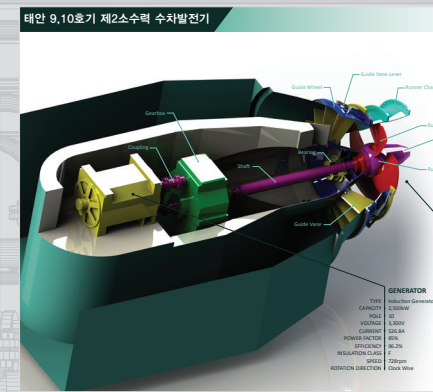
1) Renewable Portfolio Standards (RPS) : A system that requires electricity providers (suppliers) with power-generation facilities over a certain capacity to supply a specified amount of energy in new and renewable energy.

Hwaseong Namyang Fuel Cell Power Plant



The Hwaseong Namyang Fuel Cell Power Plant is a construction project that KOWEPO is undertaking to comply with energy transition policies, and to promote the hydrogen economy. KOWEPO aims to complete this project by April 2021, and hence expects to provide stable power in the Hwaseong area with a high-efficiency clean energy source.

Taeon No.2 Small Hydro Power Plant



KOWEPO plans to increase the rate of new and renewable energy generation to more than 25% of total power-generation by 2030, in line with the government's policy to expand the supply of new and renewable energy. In order to achieve this, the company has begun construction of the Taeon No. 2 Small Hydro Power Plant, a small hydro power-generation facility that uses the pressure head of cooling water drainage, in 2017, with expected completion by November 2020. The operation of this power plant will contribute to the reduction of carbon emissions and the stable supply of electricity.

Seoincheon Fuel Cell Power Plant



The Seoincheon Fuel Cell Power Plant is being developed as a new energy source that utilizes eco-friendly, highly-efficient, and clean energy that's in line with the National Hydrogen Roadmap. 4th phase construction of the Seoincheon Fuel Cell Power Plant has been completed (total 56.24MW), and the plant has begun commercial operation. The 5th phase is scheduled to be completed by July 2021. The Seoincheon Fuel Cell Power Plant is expected to contribute to promoting hydrogen economy and providing a stable power supply in the Incheon area.

Uiwang Fuel Cell Power Plant, Korea Rail Network Authority



In order to guarantee a stable power supply in the Uiwang area, and to promote the hydrogen economy, KOWEPO is pursuing the construction of the Korea Rail Network Authority Uiwang Fuel Cell Power Plant. Commercial operations are aimed to begin in June 2021, with the Uiwang Fuel Cell Power Plant constituting an exemplary case of cooperation between public institutions utilizing state-owned land possessed by the Korea Rail Network Authority.

Installed Capacity

Electricity of **510MW**
Heating energy of **281 Gcal/h**

Construction Period

The second half of 2020 - June 2023

Installed Capacity

18MW

Construction Period

March 2020 - July 2021

Installed Capacity

20.24MW

Construction Period

May 2020 - April 2021

Installed Capacity

5MW

Construction Period

July 2017 - November 2020

Installed Capacity

20.24MW

Construction Period

July 2020 - July 2021

Installed Capacity

9.9MW

Construction Period

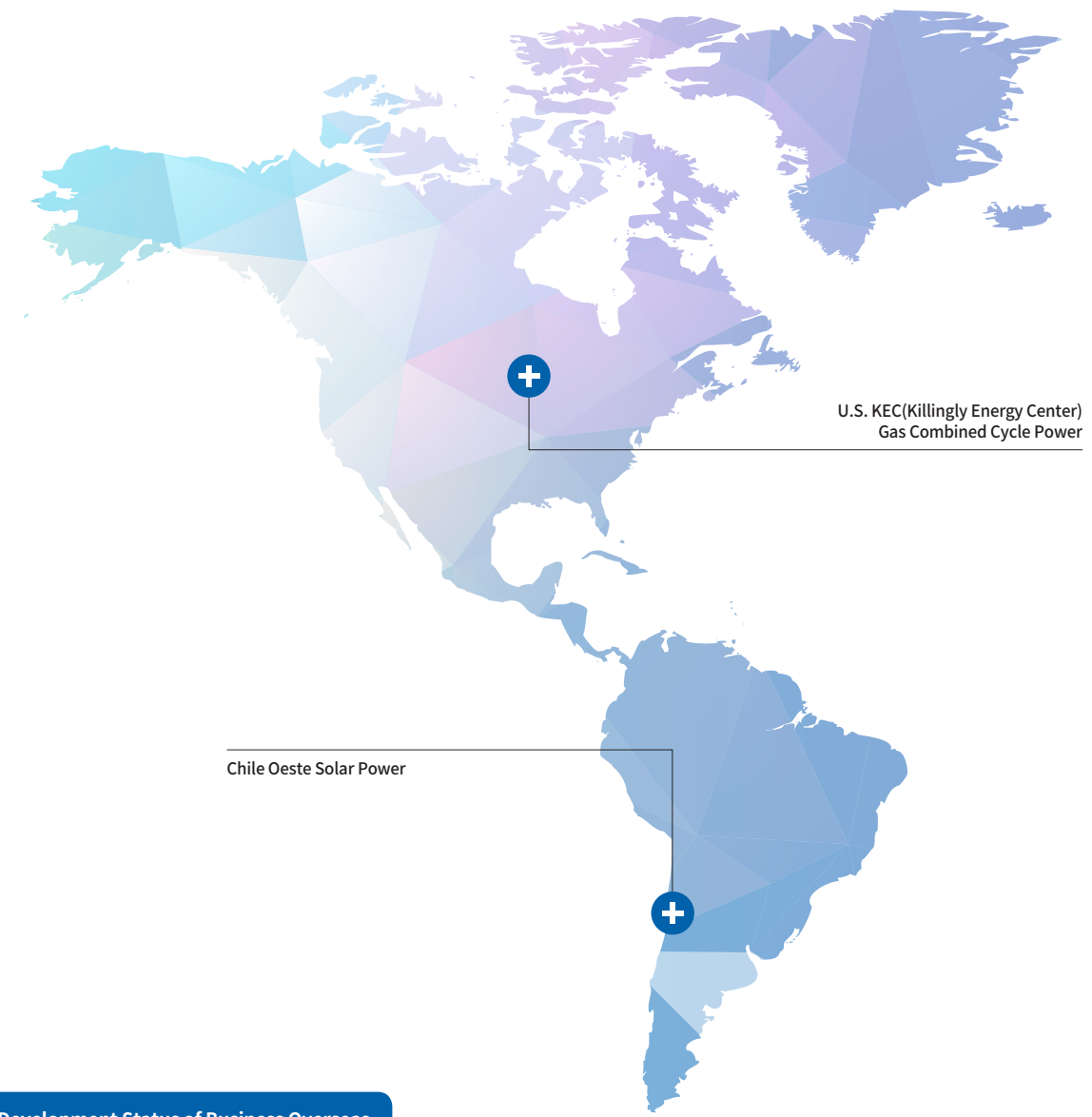
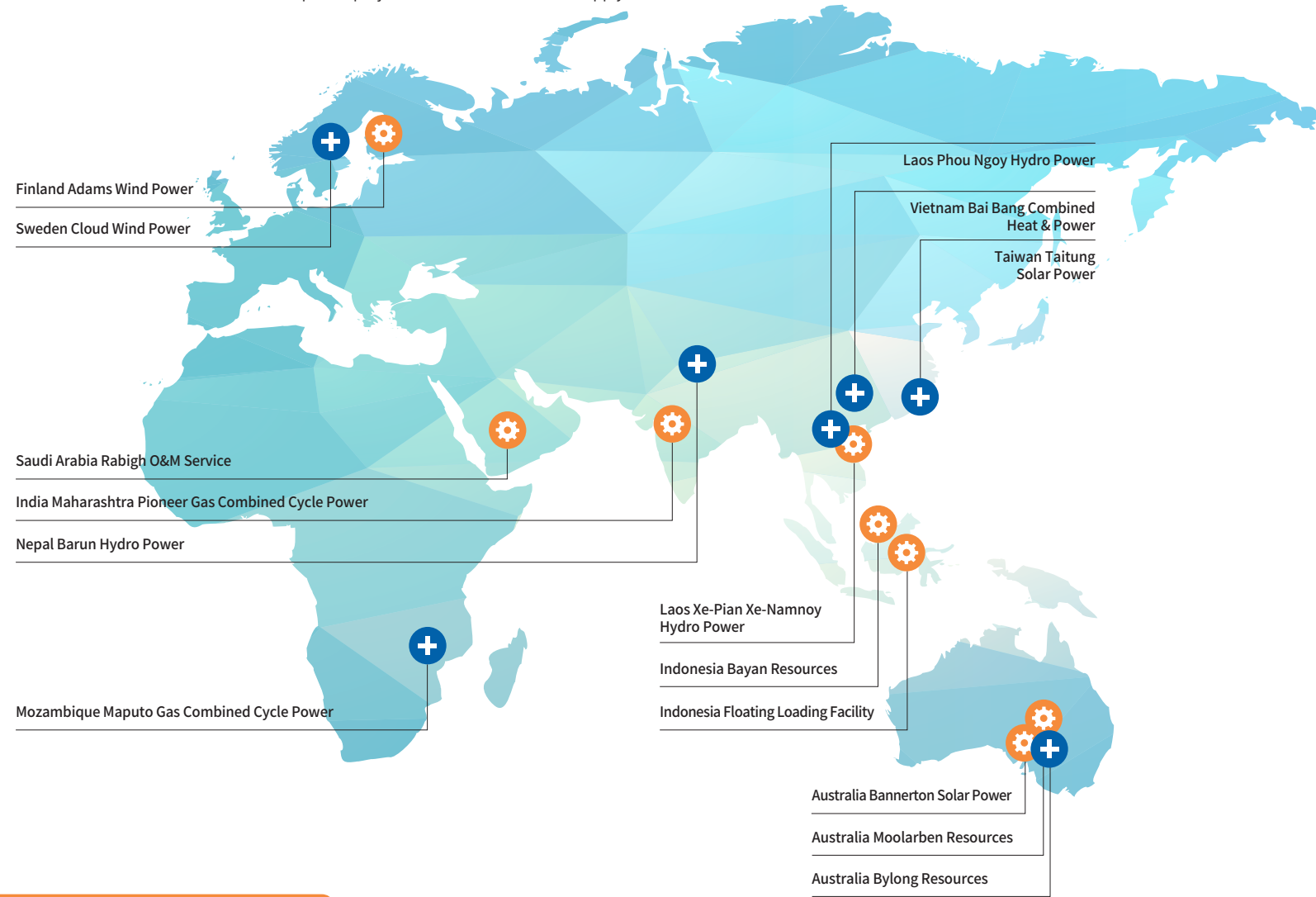
June 2020 - June 2021

Business Introduction

Overseas business

Based on power plant construction and its O&M (operation and maintenance) technologies, KOWEPO is engaging in diverse overseas projects in collaboration with Korean companies. In addition, the company is solidifying its foundation for sustainable growth from multiple perspectives through participation in overseas resource development projects to secure a stable fuel supply.

Operation Development



Operation Status of Overseas Business

Saudi Arabia Rabigh O&M Service O&M 1,204 MW	India Maharashtra Pioneer Gas Combined Cycle Power Investment in Power Generation 388 MW	Laos Xe-Pian Xe-Namnoy Hydro Power Investment in Power Generation, O&M 410 MW	Finland Adams Wind Power Investment in Power Generation 73 MW
Australia Bannerton Solar Power Investment in Power Generation 110 MW	Australia Moolarben Resources Resource Development 16 million tons/year	Indonesia Bayan Resources Resource Development 30 million tons/year	Indonesia Floating Loading Facility Resource Development 8 million tons/year

Development Status of Business Overseas

U.S. KEC(Killingly Energy Center) Gas Combined Cycle Power Investment in Power Generation 632 MW	Mozambique Maputo Gas Combined Cycle Power Investment in Power Generation, O&M 1,000 MW	Vietnam Bai Bang Combined Heat & Power Investment in Power Generation, O&M 25 MW	Laos Phou Ngoy Hydro Power Investment in Power Generation, O&M 728 MW	Nepal Barun Hydro Power Investment in Power Generation, O&M 132 MW
Taiwan Taitung Solar Power Investment in Power Generation, O&M 32 MW	Chile Oeste Solar Power Investment in Power Generation, O&M 60 MW	Sweden Cloud Wind Power Investment in Power Generation 241 MW	Australia Bylong Resources Resource Development 3.6 million tons/year	

Business Introduction

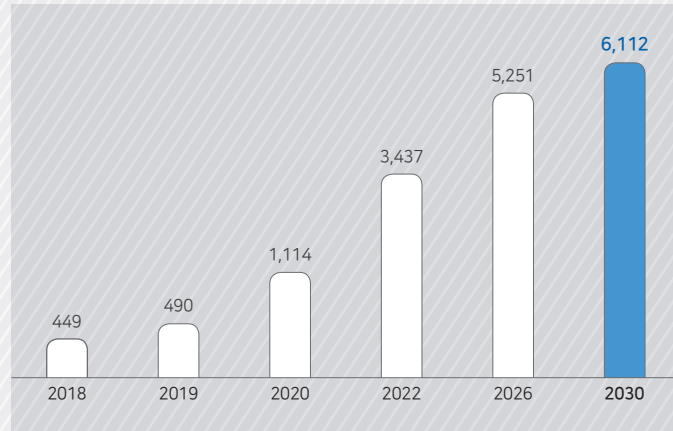
New & Renewable Energy Business

KOWEPO aims to strengthen its role in the large-scale, new and renewable energy business sector by securing new growth engines from eco-friendly energy sources, and by actively responding to the government's new and renewable energy promotion policies. With the goal of expanding new and renewable energy to 25 percent or more of total power generation by 2030, KOWEPO has established a 'New & Renewable Energy 3025 Roadmap' and expanded the scope of its projects.

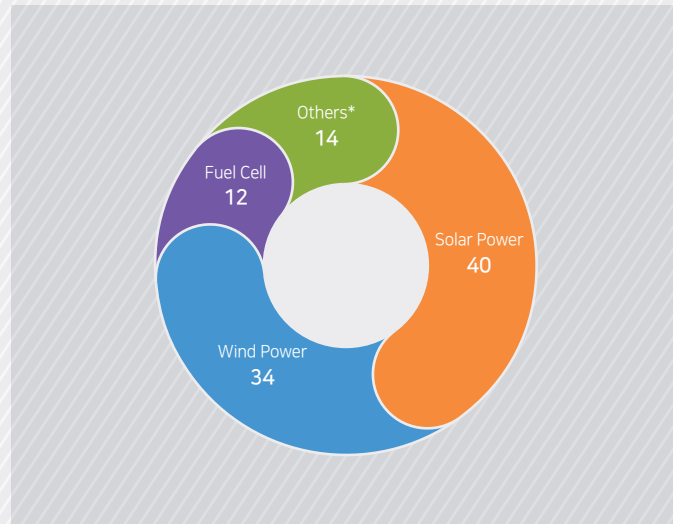


New & Renewable Energy 3025 Roadmap

Plan to Expand Installed Capacity of New & Renewable Power Generation
(Unit: MW)



Composition of New & Renewable Energy Facilities in 2030
(Unit: %)



*Others: IGCC, Small Hydro Power

Operation Status of New & Renewable Business
(As of June 30, 2020)

Solar Power 	47.175 MW (28 locations)
Wind Power 	16.00 MW (1 location)
Fuel Cell 	61.965 MW (5 locations)
Others (IGCC, Small Hydro Power) 	348.5 MW (2 locations)



Sustainable Value-Creation Process

GRI 102-9

(As of 2019)

INPUT VALUE

Financial value

Assets	KRW 10 trillion and 482.4 billion
Liabilities	KRW 6 trillion and 644.3 billion
Capital	KRW 3 trillion and 838.1 billion

Production value

Installed capacity	11,338 MW
Volume of power generation	46,481 GWh
Tangible assets	KRW 8 trillion and 831.7 billion

Environmental value

Total environmental investment	KRW 91,647 million
Operating costs in environmental sector	KRW 176,216 million
Development costs in environmental sector	KRW 1,113 million

Innovation value

Holdings of intangible assets (industrial property rights)	396 cases
R&D investment	KRW 12.1 billion
R&D personnel	23 persons

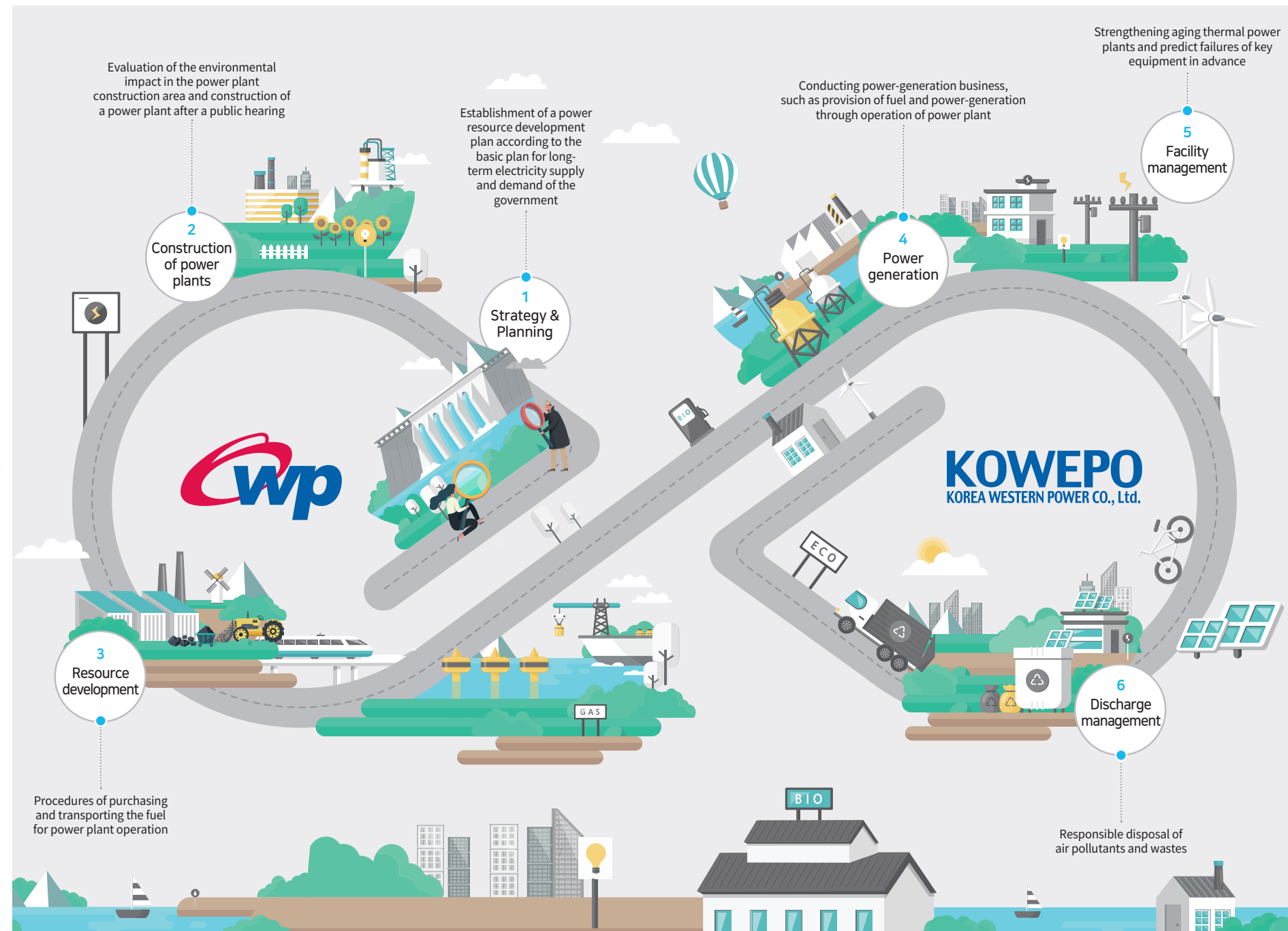
Human resource value

Number of employees	2,505 persons
Training hours per person	118.84 hours
Training cost per person	KRW 2,596,000

Social value

Donation	KRW 8 billion
Number of volunteers	1,982 persons
Hours of volunteer works	36,006 hours

BUSINESS ACTIVITIES



OUTPUT VALUE

Financial value

Sales	KRW 4 trillion and 468.5 billion
Distribution to vendors	KRW 4 trillion and 205.2 billion
Distribution to employees	KRW 259.7 billion

Production value

Volume of power transmission	43,464 GWh
Volume of power transaction	44,244 GWh
Market share	9.00%

Environmental value

Greenhouse gas reduction	1.97 million tons
Air pollutant reduction rate	69.6%
Waste recycling amount (ratio)	33,946 tons (79%)

Innovation value

Implementation rate of five core technology developments	19.7%
Registration of industrial property rights	36 cases
Jobs	113 persons

Human resource value

Female employees (ratio)	303 (12.1%)
Education satisfaction level	79.4 points
Number of union members (enrollment rate)	1,734 persons (97.3%)

Social value

Contributing to the local community and pursuing social contribution work by conducting career counseling for youth, creating jobs for the elderly, and building up a market for local floriculture farmers	Community Satisfaction level	86 points
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PART 02

SUSTAINABILITY MANAGEMENT

- 24p  Corporate Governance
- 26p  Ethics and Human Rights Management
- 30p  Risk Management
- 32p  Stakeholder Communication and Engagement
- 34p  Materiality Assessment

KOWEPO has established a sound corporate governance and strengthened ethics and human rights management and communication with stakeholders in order to actively implement sustainable management.

Corporate Governance

GRI 102-18

Composition of the Board of Directors

KOWEPO has enhanced the expertise, independence and diversity of the board of directors by establishing sound corporate governance. The board of directors consists of four standing directors, including the president and executive auditor, and five non-standing directors. The chairman of the board is appointed among the non-standing directors. In addition, in order to achieve gender equality in the board of directors, the “Gender Equality Executive Appointment Target System” was introduced to ensure that female executives may hold more than 20% of the available positions.

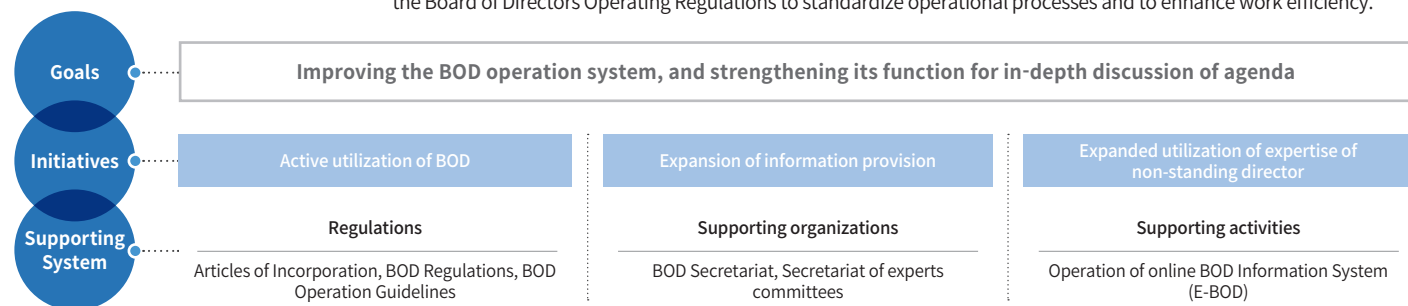
(As of June 30, 2020)

Type	Position	Name	Gender	Professional Background	Terms of Office
Standing director	President	Kim Byung-sook	Male	<ul style="list-style-type: none"> Representative of Ulleungdo Eco-friendly Energy Independent Island Co., Ltd. Head of New Growth Engine Division of KEPCO 	Mar. 2018–Mar. 2021 (3 years)
	Executive Auditor	Choi Hyang-dong	Male	<ul style="list-style-type: none"> Member of Energy Valley Forum Steering Committee Head of Social and Solitary Economy Research Institute 	Sept. 2018 –Sept. 2020 (2 years)
	Head of Planning & Administration Division	Song Jae-sub	Male	<ul style="list-style-type: none"> Head of New Growth Business Division, KOWEPO Head of Planning Department, KOWEPO 	June 2018–June 2021 (3 years)
	Head of Engineering Division	Choi Yong-beom	Male	<ul style="list-style-type: none"> Head of Pyeongtaek Thermal Power Complex Division, KOWEPO Head of Power-generation Management Department, KOWEPO 	June 2020–June 2022 (2 years)
Non-standing director (Chairman of the board)		Yoon Sang-yong	Male	<ul style="list-style-type: none"> Head of External Relation Division, Korea Electrical Constructors Association Head of Chungbuk Region, KEPCO 	May 2018–May 2020 (2 years)
Non-standing director		Park Young-jong	Male	<ul style="list-style-type: none"> Vice-chairman of KPO Prestigious Instructors' Association Director of Daejeon Daedeok Post Office 	May 2018–May 2020 (2 years)
Non-standing director		Lee Gwi-Ok	Female	<ul style="list-style-type: none"> Professor at Sejong University Media Communication Dept. President of the Korea Health Communication Society 	Nov. 2018–Oct. 2020 (2 years)
Non-standing director		Park Si-young	Male	<ul style="list-style-type: none"> CEO, Wing Korea Consulting Director of K-Stat Research 	Nov. 2018–Oct. 2020 (2 years)
Non-standing director		Cheon Haeng-kwan	Male	<ul style="list-style-type: none"> Auditor of Gwangju Chamber of Commerce Representative tax accountant of Gwangju Branch of Ichon Taxation Corporation 	Oct. 2019–Oct. 2021 (2 years)

Operation of the BOD

Promoting the Effectiveness of the Board

KOWEPO makes diverse efforts to promote the sound operation of the board of directors. It has a secretariat of the board of directors, a dedicated supporting organization, and operates an online Board of Directors Information System (E-BOD) to resolve information imbalance between standing and non-standing directors. In addition, KOWEPO provides data on management issues and power industry trends to non-standing directors on a regular basis, and established the Board of Directors Operating Regulations to standardize operational processes and to enhance work efficiency.



Agenda for Key Resolutions

The board of directors has made resolutions on the following major issues to respond quickly to the rapidly changing business environment and to create new growth engines for the company.

Year	Category	No. of Agenda	Name of Agenda	
2018	Stable profit creation	Resolution #41	Sinpyeongtaek Combined Cycle O&M Project Plan (Proposal)	
	Expansion of new growth business	Resolution #1	Australia Bannerton Solar Power Project for 110MW (Proposal)	
		Resolution #28	Seoincheon 22MW Fuel Cell Power Plant 4 th Construction Plan (Proposal)	
	Leading realization of social values	Resolution #31	Contribution to establish a subsidiary for conversion of non-regular workers to regular workers (Proposal)	
2019	Stable profit creation	Resolution #19	Basic Plan (Proposal) for the Gimpo Combined Heat and Power Project	
	Expansion of new growth business	Resolution #2	Gunsan Combined Cycle Power Division 1 st phase 15MW Fuel Cell Power-generation Project (Proposal)	
		Resolution #29	Seoincheon 20MW Fuel Cell Project 5 th phase implementation plan (Proposal)	
		Resolution #33	Basic Plan for Haenanum Energy Fund Investment Project (Proposal)	
			Resolution #34	Basic plan for Haemodum Solar Power SPC investment Project (Proposal)
	Eco-friendly and safe power generation	Resolution #1	Change in the business plan according to the increase in the project cost of the coal storage building project in Taean No. 7 and No. 8	
		Resolution #21	2019 Basic Safety Plan (Proposal)	
Leading realization of social values	Resolution #27	2019 large and medium-sized enterprises, rural and fishery cooperation fund contribution (Proposal)		

Committees Under BOD

KOWEPO has expert committees to review the major issues of the proposed agenda in advance before it reaches the board of directors. Each expert committee is composed of 2~3 non-standing directors and 1~2 standing directors, depending on one's expertise and job relevance that's been comprehensively examined.

Names of Committees	Roles	Members (As of 2019)	Number of Committee Meetings Held	
			2018	2019
Strategic Management Expert Committee	<ul style="list-style-type: none"> Review of internal implementation plan and performance to carry out national projects Preliminary review of agenda items regarding management goals, strategies, or innovation 	3	2	1
Financial Management Expert Committee	<ul style="list-style-type: none"> Preliminary review of budget, funds, mid-and long-term financial management plans, and long-term borrowing Preliminary review of agenda items related to plant construction, investment or contribution Review of debt management such as the development of business for sensible management 	4	10	9
Ethics Management Expert Committee	<ul style="list-style-type: none"> Preliminary review of agenda items related to ethics and human rights management and mutual growth 	3	1	2

Audit Committee

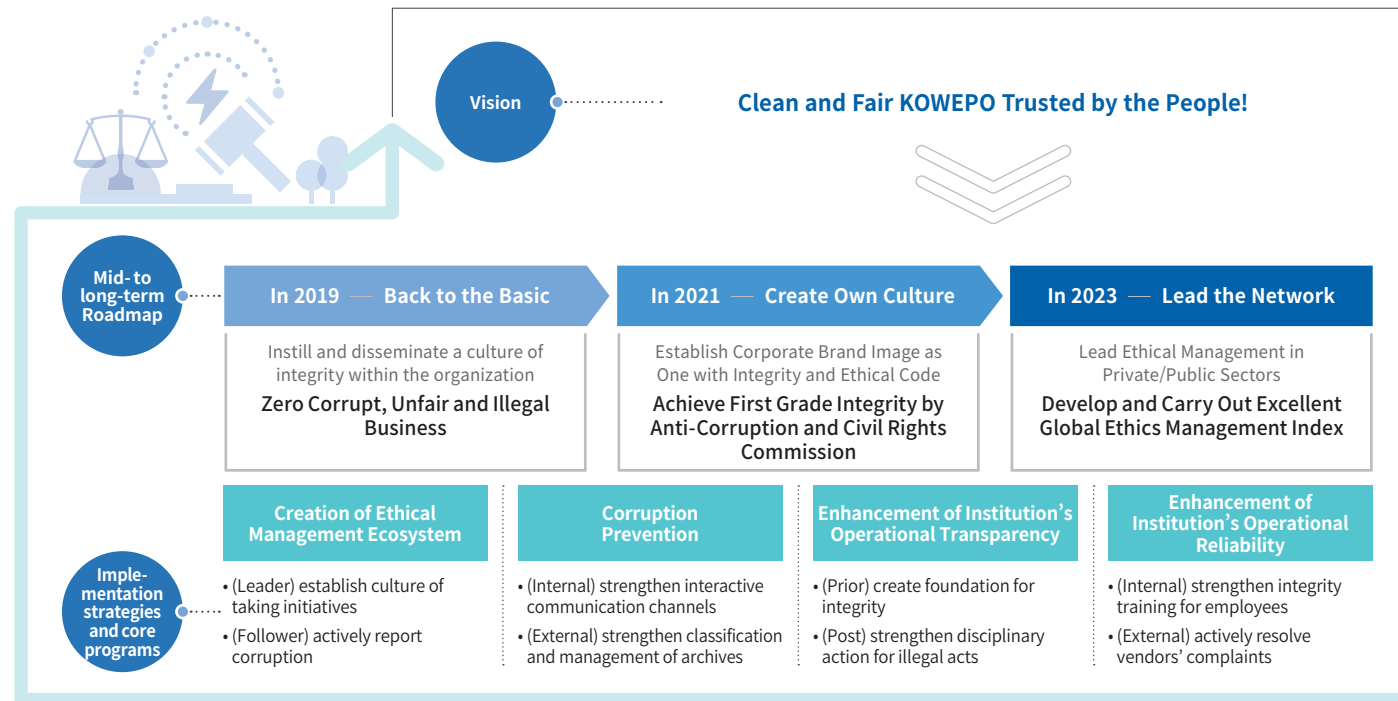
KOWEPO operates an Audit Committee to perform audits on major business performance and accounting. Two out of three Audit Committee members including the chairman are non-standing directors, and one of the audit committee members is appointed among accounting or financial experts in accordance with relevant regulations to ensure independence and expertise.

Ethics and Human Rights Management

GRI 102-12, 102-16, 102-17, 412-2

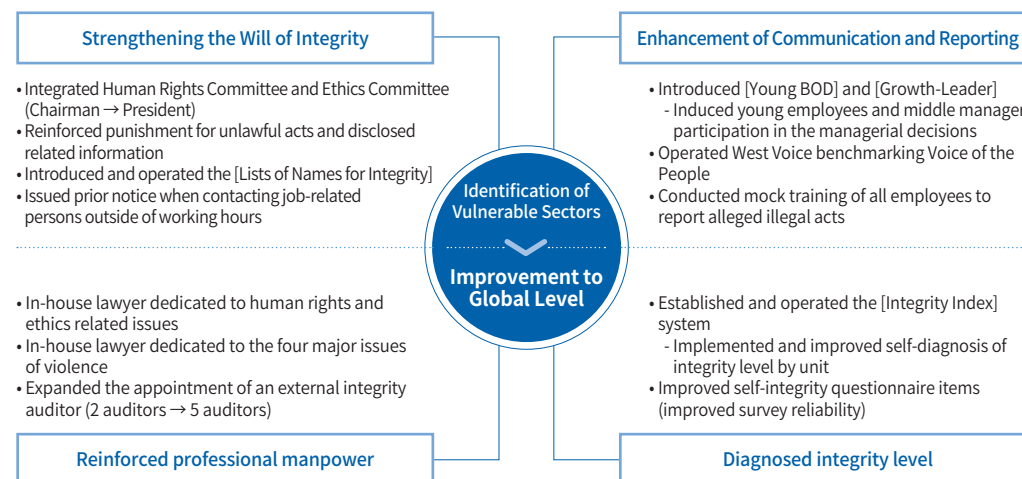
Ethical Management System

Today, ethical management has become an unavoidable agenda of this era, which is a stepping stone to realize people's fundamental rights to energy. In response, KOWEPO has selected four implementation strategies — creating an ecosystem of ethical management; preventing corruption; enhancing institution's transparency; and enhancing institution's reliability. In addition, KOWEPO has also selected eight core programs to practice ethical management, all to become a clean and fair public corporation trusted by people. KOWEPO is committed to becoming a public corporation that realizes social values by establishing and spreading ethical management.



Establishment of Advanced Ethical Management System

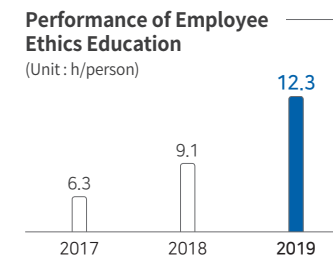
KOWEPO has established an advanced ethical management system at the global level (ISO37001) by improving the ethical management system in all aspects from A to Z. KOWEPO has introduced new systems such as Young BOD, Growth-Leader, West Voice, and Integrity Index.



Implementation of Ethical Management

Strengthening Ethics Education for all Employees and Spreading it in the Local Communities

KOWEPO strives to instill and internalize a culture of integrity based on case-focused customized integrity and ethics education for each position and duties by hiring internal and external experts. In addition, by sharing and distributing the [Improper business instructions case book] to 17 competent authorities in the public sector, the company contributes to strengthening the foundation for integrity in the public sector, while holding an integrity experience class for 350 local students jointly with the Anti-Corruption and Civil Rights Commission (ACRC). KOWEPO strives to spread the culture of integrity in the local communities.



Bolstering the Culture of Reporting

KOWEPO stipulates that the identity of the notifier should be protected and kept confidential based on thorough security and maintenance of anonymity in reporting channels such as the Red Whistle. In addition, systems and related regulations have been strengthened by raising the disciplinary measures for those conducting misconduct to the highest level of 'dismissal'. KOWEPO conducts mock trainings of reporting alleged misconduct for all employees once a year to report cases of misconduct.

Introduction of West Voice

KOWEPO, aware of the lack of communication channel for employees to convey their distress and complaints, has introduced and is running 'West Voice,' the official communication channel through which any employee can freely voice his/her grievance or complaint on any topic. This was done in order to create a culture of integrity and to strengthen interactive communication channels within the organization.

Number of Petitions

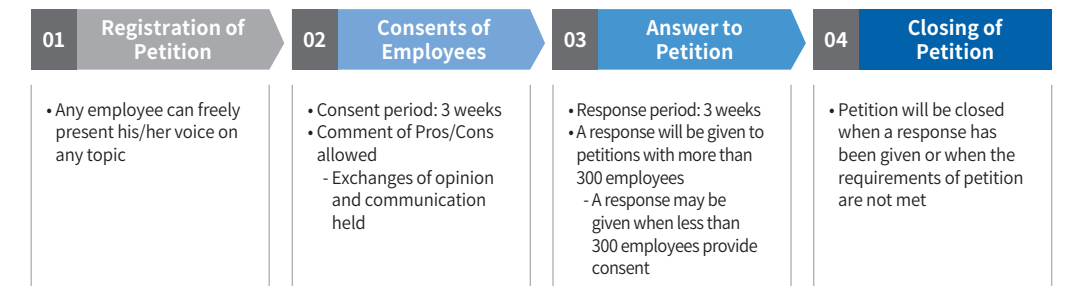
130 cases

Number of Response

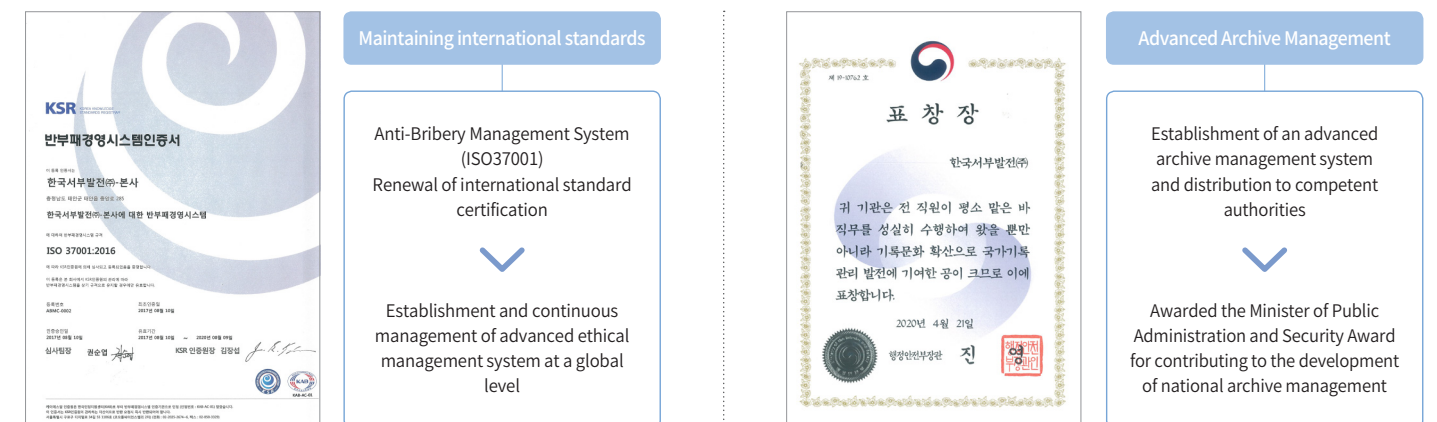
28 cases

CEO Answer

12 cases



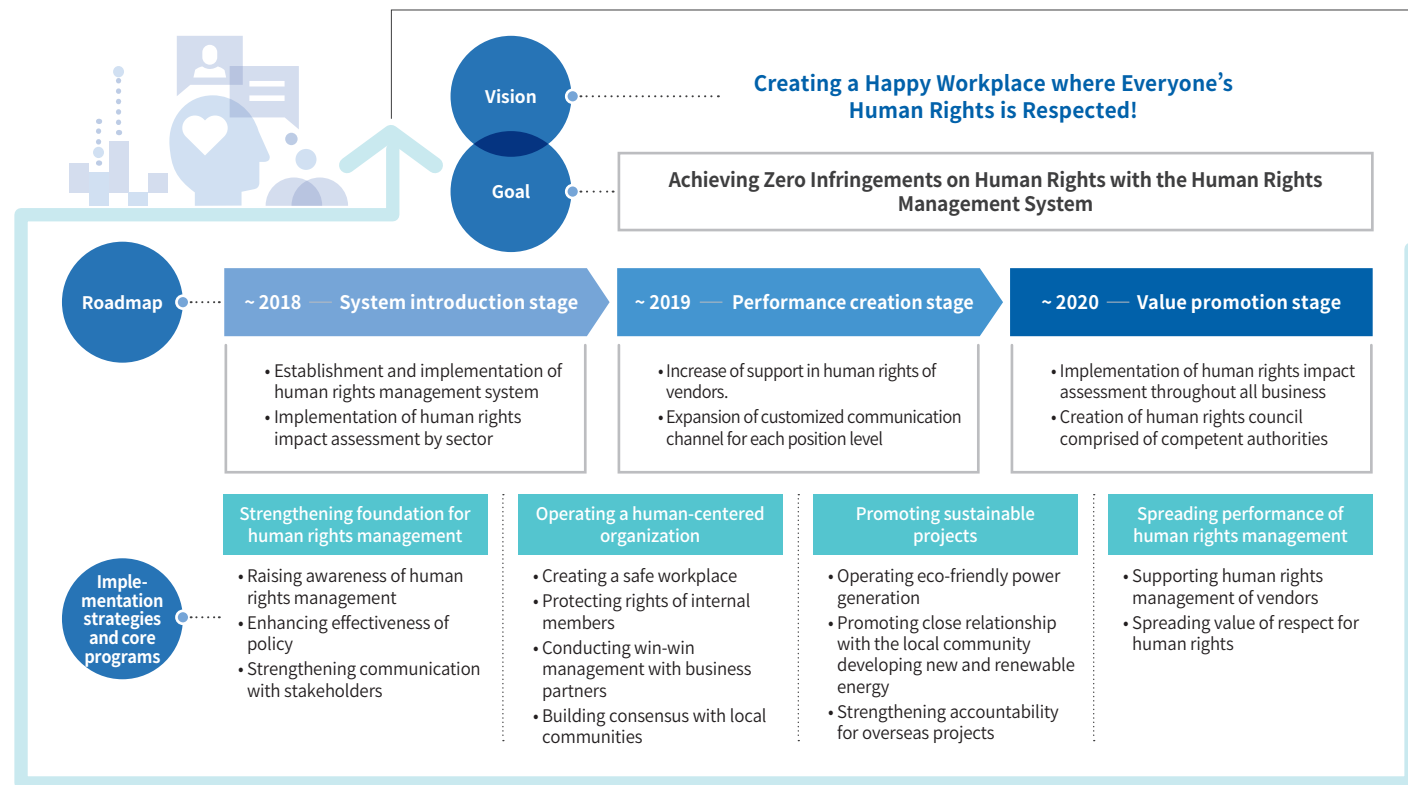
Performance of Ethical Management



Ethics and Human Rights Management

Human Rights Management System

In order to fulfill its social responsibilities as a public corporation and to practice human rights management that prioritizes human dignity and values, KOWEPO supports international human rights principles such as the UN Guiding Principles on Business and Human Rights (UNGPs), and the UN Global Compact (UNGC). KOWEPO declared the 'WP Human Rights Management Charter' and is actively putting it in practice. In addition, under the vision of 'Creating a happy workplace where everyone's human rights are respected,' KOWEPO established a human rights management promotion system to become a leading company in human rights management, as well as a 12th mid-to long-term roadmap reflecting social responsibility related international standards (ISO26000). KOWEPO is making utmost efforts to protect the human rights of all stakeholders, including those of employees.



Establishment of WP Human Rights Center

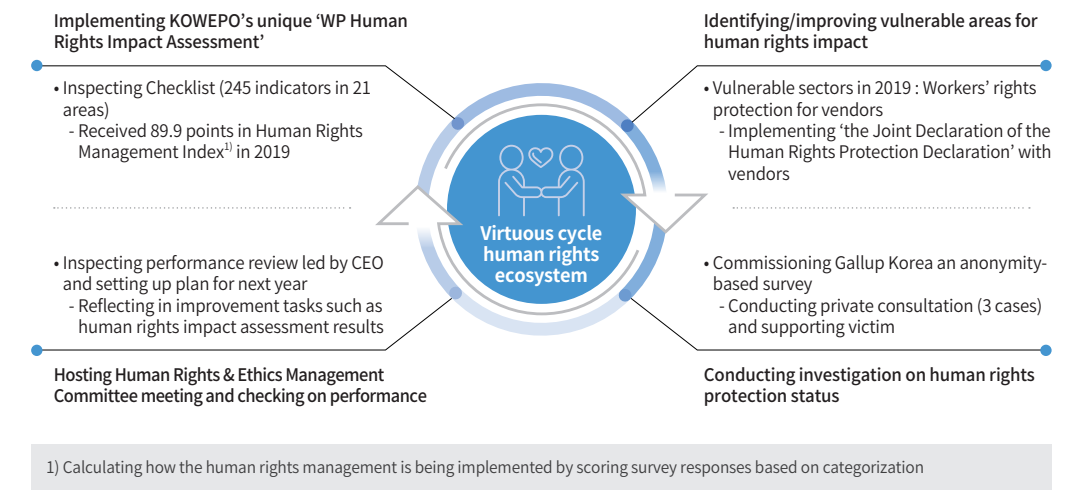
KOWEPO established the 'WP Human Rights Center' in January 2019 to protect the human rights of all people who have direct and indirect interests in the company's management activities and it is rescuing the human rights victims. The center provides counseling on human rights violations and other related cases including physical and verbal abuse, sexual harassment and sexual assault, receives reports on and investigates human rights violations, and protects the victims and notifiers of human rights violations. In particular, the center prioritizes protecting identify of those who reported the case and strictly prevents data that may expose the identity of the notifier from being disclosed or leaked without justifiable reasons.

Development of WP Sexual Harassment and Sexual Assault Report Application (Listen2ME)

Since 2020, KOWEPO has developed and operated the 'WP Sexual Harassment Report Application (Listen2ME),' an application for preventing and reporting violations. This was done in order to eradicate sexual harassment and sexual assault. The main functions include a violation record creation tool, a guide for responding to sexual violence reviewed by experts, reporting and transmitting stored violations, and joint reporting of habitual criminals. Details are encrypted and safely stored on a smartphone of the notifier to ensure confidentiality.

Virtuous Cycle Human Rights Ecosystem Operating System

KOWEPO operates a virtuous cycle human rights ecosystem operation system that checks the progress of human rights management and provides feedback on improvements to decrease human rights violations and prevent secondary victimization. In addition, the company established the 'Manual for Consultation and Investigation of Human Rights Violations,' for the first time as a public corporation, and shared the manual with competent authorities in order to contribute to securing the effectiveness of relief of the victims and strengthening the foundation for the relief of the victims of human rights violations in the public sector.



Performance of Human Rights Management

Declaration of WP Human Rights Management and Implementation of Human Rights Education

- Shared status of human rights and conducted relevant trainings for the management and partner firms (five times)
- Improved four internal regulations, including strengthening of disciplinary rules for misconduct
- Investigated the human rights protection status and operated the WP Human Rights Center to help five human rights victims and prevent secondary victimization



Declaration Ceremony of WP Human Rights Management

Signing a Joint Human Rights Management Agreement with Partner Firms

- Supported assessments of human rights impact and education programs for key partner firms
- Signed a joint declaration of the human rights protection agreement with partner firms (eight companies) in major business areas in order to promote respect for human rights



Declarative Statement of Partner Firm's Human Rights Protection Agreement

Risk Management

GRI 102-11, 102-15

Risk Management System

Key Risk Index (KRI)

KOWEPO defines 'Enterprise Key Risk Index (KRI)' every year in order to respond effectively to management risks. In 2020, the company set 27 key risk indexes in five sectors to establish and implement a crisis response scenario plan. In particular, KOWEPO reinforced the financial risk management by setting detailed management indicators as risk management indexes to achieve mid- to long-term financial targets.

Sectors	Area	Key Risk Indexes
Market risks	Market risks	Exchange rate, Corporate bond interest rate, Bituminous coal unit price reduction rate
	Stability	Debt ratio
Financial risks	Profitability	Net income, Implementation rate of financial improvement plan
	Growth	Sales (electricity sales revenue, overseas projects)
	Activity	Total asset turnover
	Integration	Financial target achievement rate
Investment risks	Profitability	Net profit on sales (domestic equity investment, overseas projects)
Business risks	Power generation	Forced outage factor, Capacity factor, Appropriate stock of bituminous coal
	New and renewable energy operations	Volume of new & renewable power generation, Level of RPS target achievement
	Disasters and safety	Disaster management rate, Industrial-accident prevention efforts
Policy risks	Construction	Construction process rate (domestic, new and renewable)
	Job policy	Job creation
	Environmental policy	Fine-dust reduction rate, GHG emission right performance rate
	Technology management	Implementation rate of the development of five core technologies
	Security	Level of information security management
	Ethical management	Integrity ethics

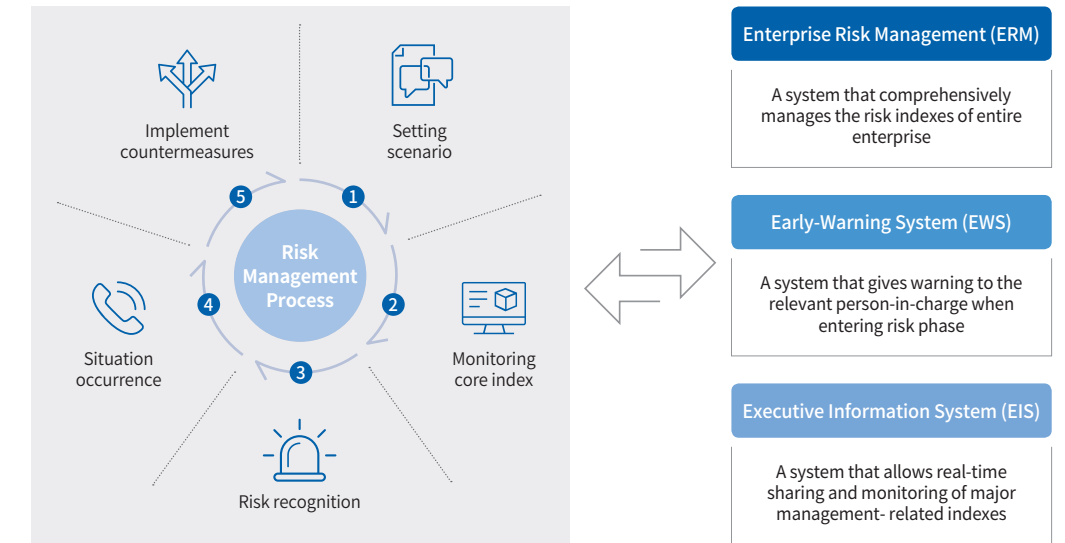
Risk-Management Organization

KOWEPO operates regular and emergency risk-management organizations in order to check and respond to risk factors in advance. The regular risk-management organization, which consists of 19 teams in charge of risk management led by the Risk Management Department, predicts and manages risks. The emergency risk-management organization, which includes the Risk-Management Committee, Foreign Exchange Risk-Management Committee, and Project Selection (working-level) Committee, deliberates and resolves risk countermeasures by category in order to systematically manage risks.

Category	Roles	Number of Meetings Hosted	
		2018	2019
Risk-Management Committee	<ul style="list-style-type: none"> Identifying enterprise-wide key risks and establishing and implementing countermeasures Conducting feasibility study of company's businesses of over KRW 10 billion as well as of all investments 	7	11
Foreign Exchange Risk-Management Committee	<ul style="list-style-type: none"> Setting the foreign exchange risk management plan, hedge ratio, etc. 	4	4
Project Selection (working-level) Committee	<ul style="list-style-type: none"> Deciding whether or not to implement a joint venture project worth more than KRW 30 billion (Selection Committees) and less than KRW 30 billion (Practice Committees) at home and abroad 	4	5

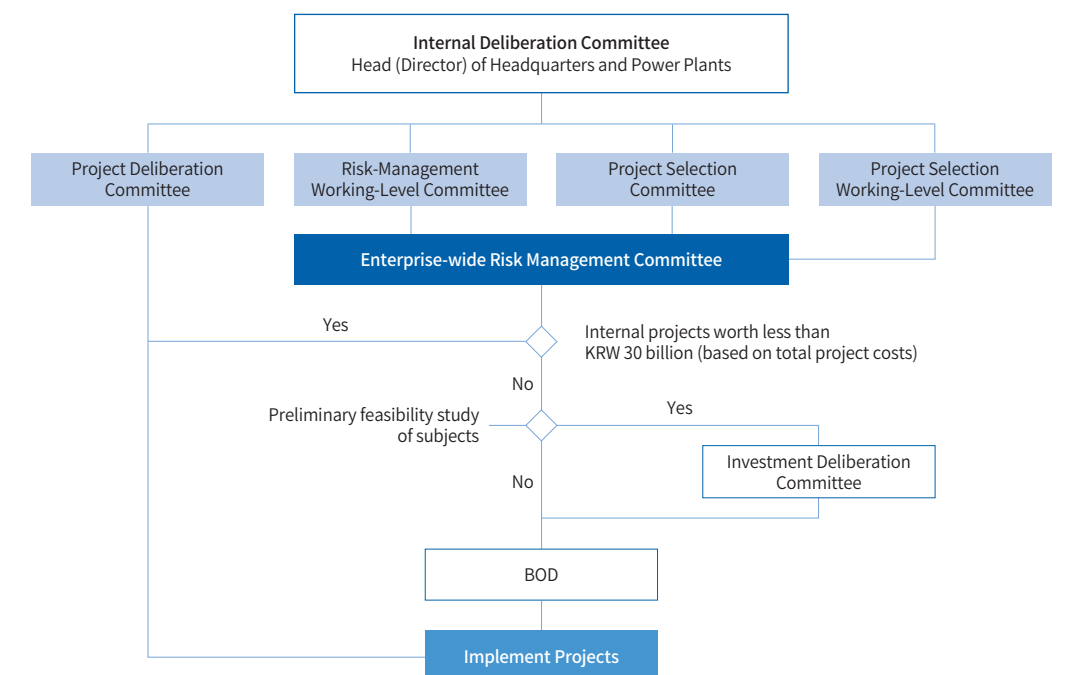
Risk Management System

KOWEPO prepares for the occurrence of risk factors through organic management of the risk management system which consists of risk management, early warning, management information system and the risk management organization. In addition, the company checks and preemptively responds to risks that may occur in the course of conducting management activities through online real-time risk-management functions. In addition, KOWEPO strives to spread awareness of risk management to all employees by sharing relevant information with them.



New Project Risk Assessment Process

KOWEPO established the new project risk-assessment process for investments in new projects, led by the enterprise-wide Risk Management Committee. KOWEPO also objectively assessed the feasibility of new projects by hiring external experts to reduce risks for investments in them.

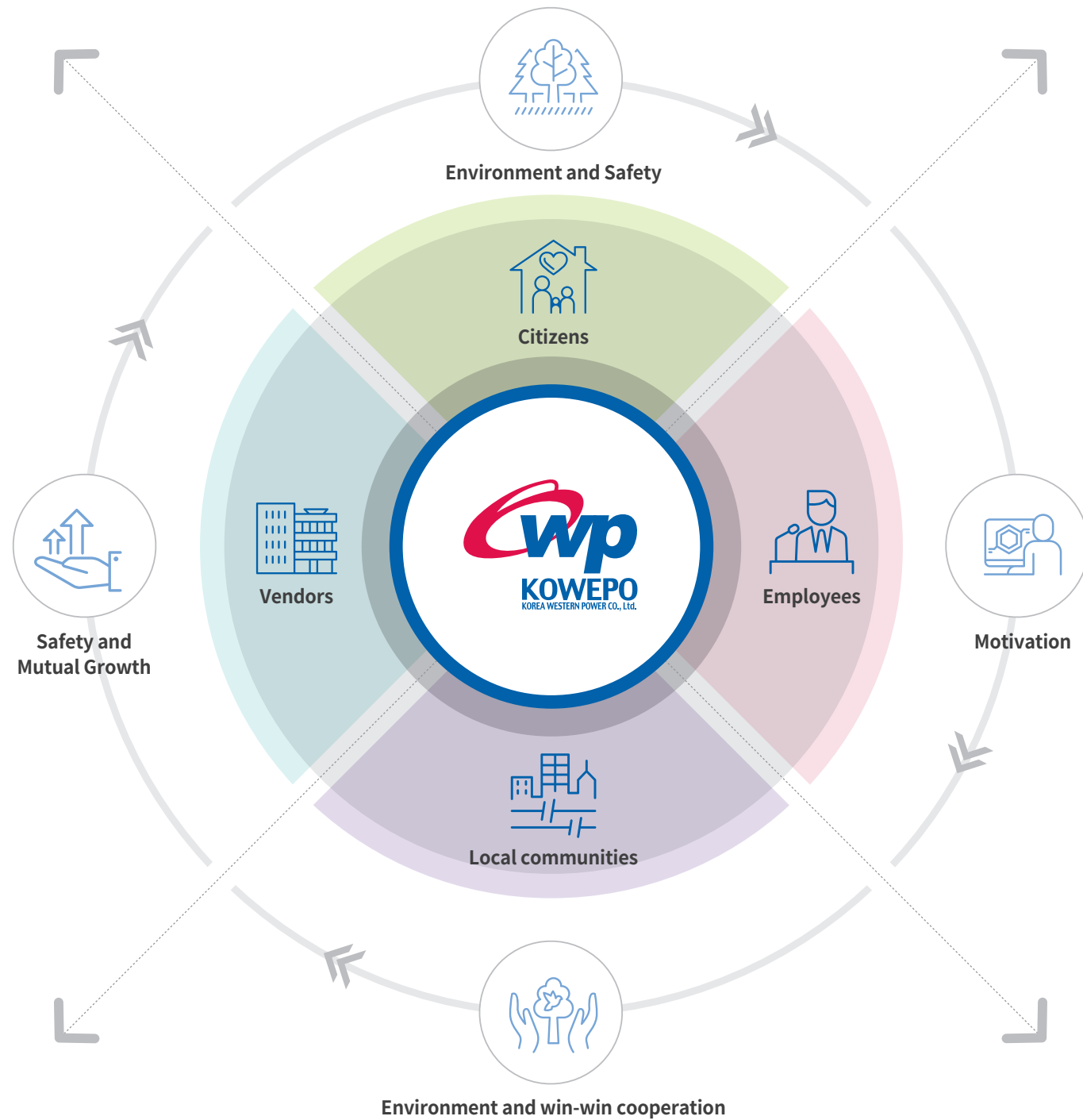


Stakeholder Communication and Engagement

GRI 102-40, 102-42, 104-43, 102-44

Close Communication with Stakeholders

Stakeholders are those who influence the organization's decision-making, or are affected by the business activities of the organization. Companies are required to communicate with stakeholders to discover and resolve their key needs. KOWEPO defines its major stakeholders as the citizens, employees, vendors, and local communities in order to lead an open communication with them. KOWEPO's actively implements the interests of the stakeholders that have been identified through various channels of close communication in management activities to create sustainable management performance that the stakeholders agree with.



Stakeholders	Efforts to communicate	Major needs	Implementation Details
<p>Citizens</p>	<ul style="list-style-type: none"> Operating a monitoring group for public communication Leading a public voice forum on WP website 	<ul style="list-style-type: none"> Proactive feedback on issues regarding fine-dust of power plant, develop eco-friendly methods Preventing recurrence of disasters through strict follow-up measures based on safety accident in Taean 	<ul style="list-style-type: none"> Preemptively disclosing interested information and conducting continued PR on fine-dust reduction efforts on social network 37 times Actively disclosing improvement result of field risk factors 6,326 cases
<p>Employees</p>	<ul style="list-style-type: none"> Direct communication with CEO (West Voice) Operating Young BOD Growth-Leader 	<ul style="list-style-type: none"> Stabilizing organization and boosting morality Realizing a workplace where employees want to work Creating safe work environments 	<ul style="list-style-type: none"> Proclaiming labor-management joint declaration to overcome economic crisis Hosting labor-management open forum on management issues in five areas and host event for a harmonious partnership Frequently sharing of CEO messages 76 times
<p>Vendors</p>	<ul style="list-style-type: none"> Council of 2nd & 3rd tier consignment vendors Overseas sales support council Visits to vendors 	<ul style="list-style-type: none"> Creating safe working environments Supporting SMEs in exploring overseas sales channels Supporting small-sized new and renewable energy providers 	<ul style="list-style-type: none"> Identifying and improving risks factors jointly with vendors 60 cases Operating overseas market exploration teams and supporting obtaining of AEO Creating integrated fund for small-sized photovoltaic projects
<p>Local communities</p>	<ul style="list-style-type: none"> Expanding on operation of committee that promotes social values Attending meetings with head of community organizations (monthly) 	<ul style="list-style-type: none"> Improving reliability of fine dust measurement results that surround power plants Implementing projects that may provide direct contributions to the local communities such as strengthening independence of local communities 	<ul style="list-style-type: none"> Strengthening fine-dust monitoring levels surrounding the power plants Implementing regeneration projects in rural villages Leading improvement of medical service quality of public hospitals in the key regions (Taean, Seosan)

Materiality Assessment

GRI 102-47, 103-1



Key Issues for KOWEPO Sustainability Management

KOWEPO has selected key issues for sustainability management in accordance with the materiality assessment methods recommended by the GRI Standards, (ISO26000), an international standard for sustainability management, to understand the expectations and interests of stakeholders affected by business activities and to report major economic, social, and environmental issues affecting the business.

Identification of Sustainability Management Issue Pool

KOWEPO has carried out international standard index analysis, media research, benchmarking, and internal data review in order to identify a sustainability management issue pool. The company identified 42 issue pools that affect KOWEPO's sustainability management after verifying that the issues occur very frequently.

Category	Implementation Details
International standard index analysis	The company reviewed key issues and required items by analyzing GRI Standards, international standards and UN SDGs related to sustainability management.
Media research	The company analyzed 5,545 articles related to economic, social, and environmental issues among the articles reported in the media from January 2018 to December 2019.
Benchmarking	The company identified issues that KOWEPO should respond to and implement through the analysis of the Sustainability Report of power-generating companies with excellent sustainability management performances both at home and abroad.
Internal data review	The company reviewed internal data such as major project status and management performance reports to identify issues related to the sustainability management of KOWEPO.



Survey of Stakeholders

An online survey was conducted among employees, the government, local communities, and vendors in order to understand the interests of stakeholders related to sustainability management activities and issues of KOWEPO. The result of online survey conducted from April 23 to May 8, 2020 was used as a basic data for identifying the key issues of sustainability management.

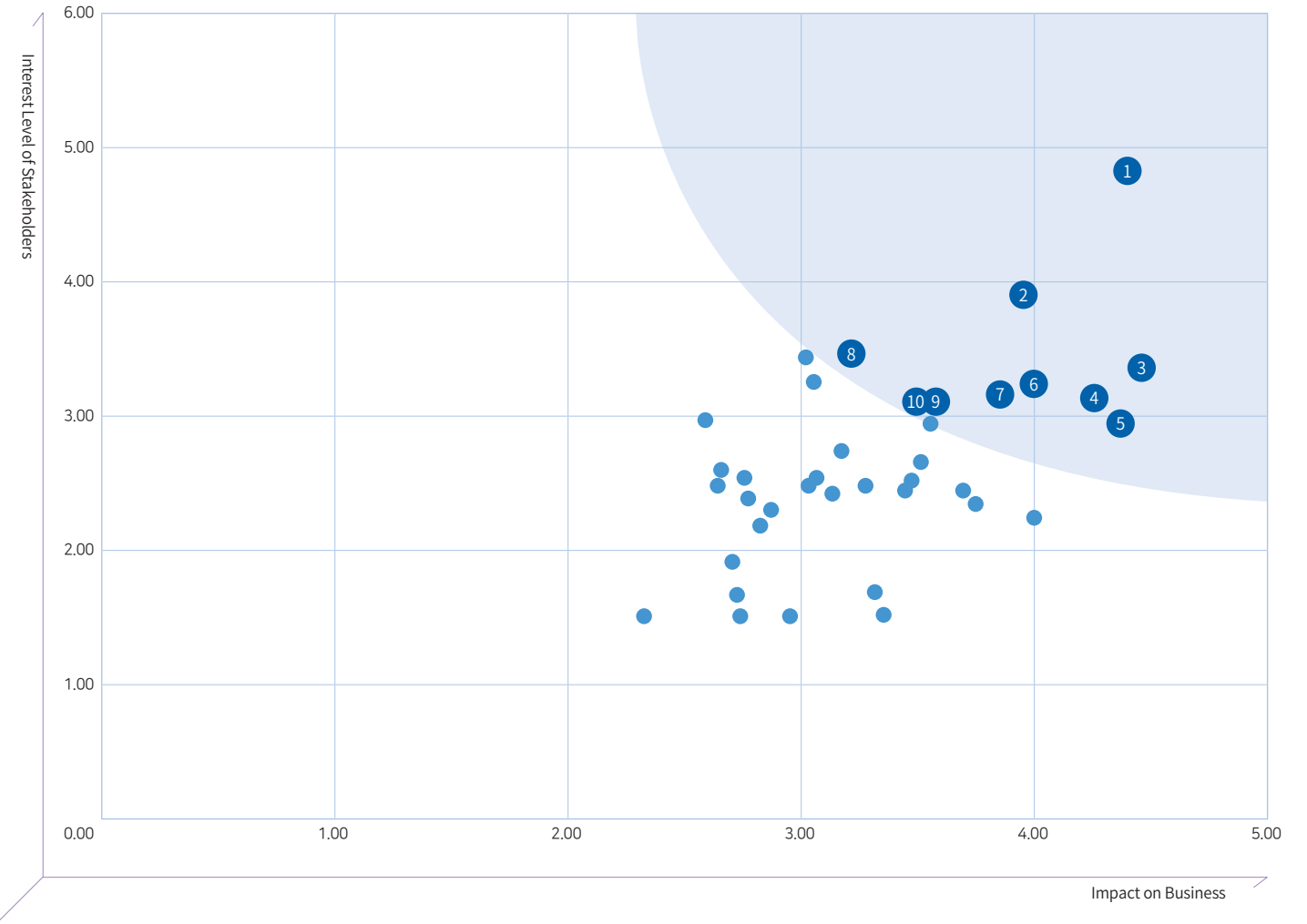
Overview of Stakeholder Survey	Period	April 23, 2020 ~ May 8, 2020
	Method	Online survey
	Evaluation Methods	A total of 42 issues related to economy, society, and the environment were evaluated on a five-point scale <input type="checkbox"/> Very important. <input type="checkbox"/> Important. <input type="checkbox"/> Normal. <input type="checkbox"/> Not important. <input type="checkbox"/> Not very important.



Results of Materiality Assessment

KOWEPO's key sustainability management issues selected through the materiality assessment in 2020 consisted of 10 issues in five areas. We plan to continuously share those key issues by discussing them among different departments, and by using the shared key issues to establishing enterprise-wide management goals. In addition, they will also be applied to business processes to create substantial sustainability management performance that stakeholders will be able to witness.

MAP Selecting 10 Key Issues



Ten Key Issues






(Unit : Points)

Rank	Category	Key Issues	Impact on Business	Interest-Level of Stakeholders
1	Economy	Stable supply of power through operational optimization	4.40	4.83
2	Social responsibility	Job creation and stable employment	3.96	3.90
3	Social responsibility	Strengthening social contribution activities focusing on the electric power industry	4.46	3.36
4	Corporate culture	Pursuit of work-life balance	4.25	3.13
5	Economy	Generating revenue based on new energy businesses and leading related industries	4.37	2.94
6	Environment	Efforts to systematically manage and reduce greenhouse gas emissions	4.00	3.23
7	Ethics and Human Rights Management	Protection of human rights and diversity (Implementing gender equality, etc.)	3.88	3.16
8	Ethics and Human Rights Management	Strengthening ethical management and anti-corruption systems	3.22	3.45
9	Environment	R&D of eco-friendly technology	3.55	3.10
10	Safety	Safety and health management of employees and vendors	3.51	3.10

PART

03

SUSTAINABILITY ISSUES

- 38p  Economy
- 48p  Environment
- 56p  Safety
- 66p  Social Responsibility
- 82p  Corporate Culture

KOWEPO strives to fulfill its economic, environmental, safety, and social responsibilities, and contributes to national economic development and people's happiness through sustainable management.

ISSUES
01



Economy

The Importance of Economic Issues

Stable power supply by power-generation companies is highly important. Today, electricity has become an indispensable and essential energy source, and interruptions of power-supply result in enormous economic and social costs in our society. At the same time, seamless power supply requires sustainable management by the power-generation company. Accordingly, power-generation companies should ensure a stable operation of facilities and continuous profit generation, as well as strengthen the ability to develop new businesses for future growth. In addition, power-generation companies should proactively respond to paradigm shifts in the energy industry by supplying electricity in an eco-friendly manner.


KOWEPO's Response

KOWEPO has improved the reliability of power-generation facilities to the highest level in order to stably supply electricity to the people, and is supplying power-generation fuels in accordance with demand. In addition, KOWEPO manages domestic thermal power projects in an eco-friendly manner in order to actively comply with the government's energy-transition policy. In addition, KOWEPO has expanded the new and renewable energy business both at home and abroad to actively contribute to efforts to enhance the competitiveness of the domestic power-generation industry. Furthermore, KOWEPO strives to create continued financial value by strengthening new project capabilities, such as fostering the ecosystem for the 4th industrial era, and securing the foundation for commercialization of hydrogen production for the first time in Korea.

Targets Relating to the UN SDGs




KOWEPO HIGHLIGHTS


Forced Outrage Factor
(As of 2019)

0.018 %


Sales
(As of 2019)

KRW 4.46 trillion


Installed Capacity of New & Renewable Power Generation
(Based on domestic capacity as of 2019)

490 MW

Key Issues

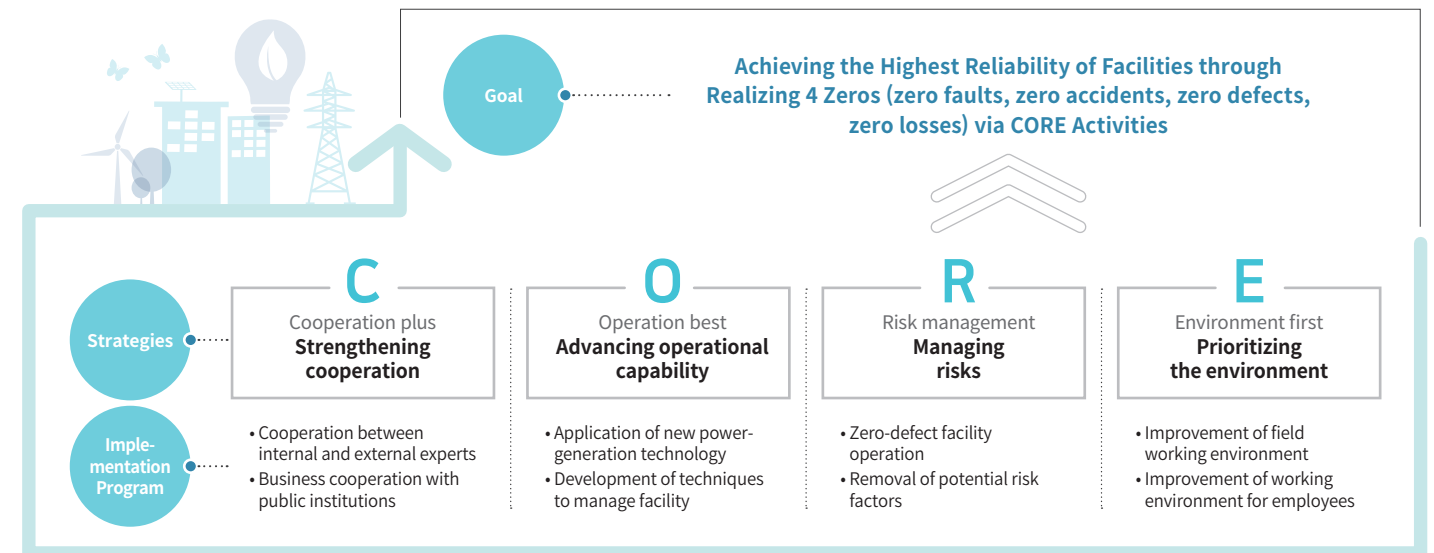
Stable and Economical Supply of Power

GRI 201-1, 203-2

Improvement of Facility Reliability

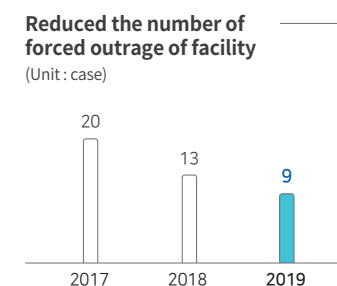
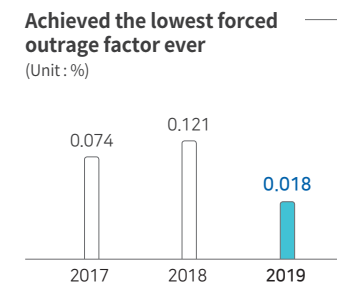
Implementation Programs for Facility Reliability

KOWEPO set itself the goal of 'Achieving the Highest Reliability of Facility through Actualizing 4 Zeros (zero faults, zero accidents, zero defects, zero losses) via CORE Activities,' aiming to rapidly improve the reliability of power-generation facilities. KOWEPO identified four major strategies and eight implementation programs to secure facility reliability.



Securing Facility Reliability

KOWEPO strengthened collaboration with external facility experts (researchers, manufacturers, specialized companies) and related competent authorities in order to improve the reliability of power-generation facilities. The company conducted technical diagnoses by dividing the facilities into core facilities, non-core facilities, and safety areas in collaboration with experts to analyze the fundamental factors of forced outage and expand the scope of diagnoses. The company has realized zero occurrences of major forced outage by identifying the causes of forced outage according to each facility, and supplementing the facilities. In addition, in order to find a solution to the decreased reliability in facilities due to frequent forced outage of gas compression at the Pyeongtaek-2 complex, KOWEPO increased the gas supply pressure in cooperation with the Korea Gas Corporation (one of the competent authorities), and thereby increasing the reliability of the facility.



Improvement of Forced Outage Factor

KOWEPO has applied new technology and developed maintenance techniques to upgrade its operational capabilities. This will make KOWEPO achieve the best facility reliability by bringing 'zero forced outage of facilities' into reality. The company has identified and intensively managed the top-10 causes of forced outage. In 2019, KOWEPO improved forced outage factor by 85% compared to the previous year by establishing a forced outage prediction system that applies new technologies such as deep learning-based abnormal prediction, IoT wireless piping leak monitoring, AR audio image analysis. KOWEPO developed the nation's first 'generator stator winding forward/reverse switching type cleaning apparatus' to improve the efficiency of its maintenance technique, thereby reducing the number of maintenance days by 92% (25 days → 2 days), and the maintenance costs by KRW 7.3 billion.

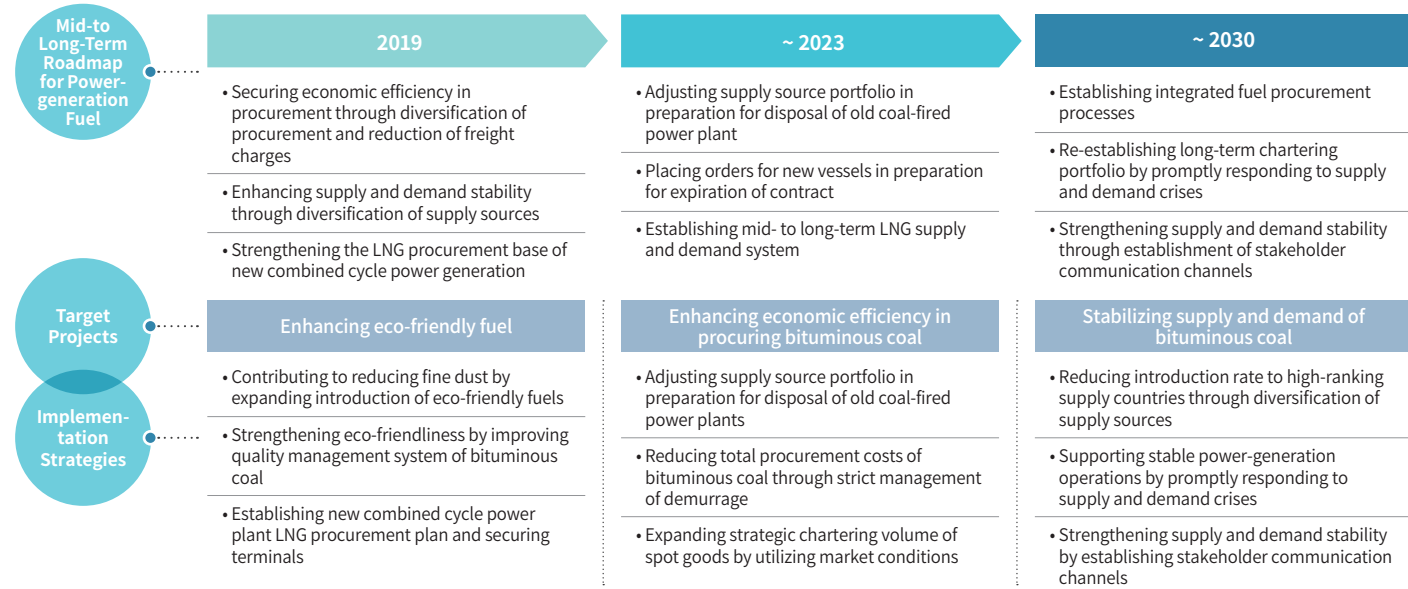
Key Issues

Stable and Economical Supply of Power

Supply and Demand of Power-generation Fuel

Mid- to Long-Term Roadmap for Power-generation Fuel

KOWEPO has secured fuel in a stable and economic way through efficient operation at all stages of supplying fuel. KOWEPO actively expanded the introduction of eco-friendly fuels to supply high-quality power nationwide by establishing a management system for power-generation fuel supply and demand in line with [KOWEPO Vision 2030].



Enhancement of Eco-friendly Fuel

KOWEPO strives to create harmony between leveraging environmental and economic values in supplying electricity in response to environmental dispatch by improving eco-friendliness in the fuel supply-and-demand process and reducing environmental costs. In addition to purchasing low sulfur coal and low ash coal, KOWEPO signed an agreement to install a ship sulfur oxide reduction device (Scrubber) and installed the Alternative Maritime Power (AMP) in response to the international environmental regulations to reduce fine dust during the transportation and berthing stages. Furthermore, KOWEPO has expanded the introduction of high-quality, eco-friendly bituminous coal by strengthening its quality management system.

Enhancement of Economic Efficiency in Procuring Bituminous Coal

KOWEPO has developed strategies, tailored to each situation, to enhance the economic feasibility of procuring bituminous coal. This was done by analyzing the market conditions and internal constraints related to the procurement of bituminous coal. In order to utilize the downward trend of the market, the company purchases bituminous coal through distributed lagging procurement based on the monthly required amount. This is to minimize the inventory management risk and reduce cost by applying various procurement techniques to improve the economic feasibility of procuring bituminous coal. Through such efforts, in 2019, the company achieved the highest savings rate (18%) compared to the market prices despite the difficulty of reducing the savings in a situation where the market price has plummeted by more than 30% compared to 2018.

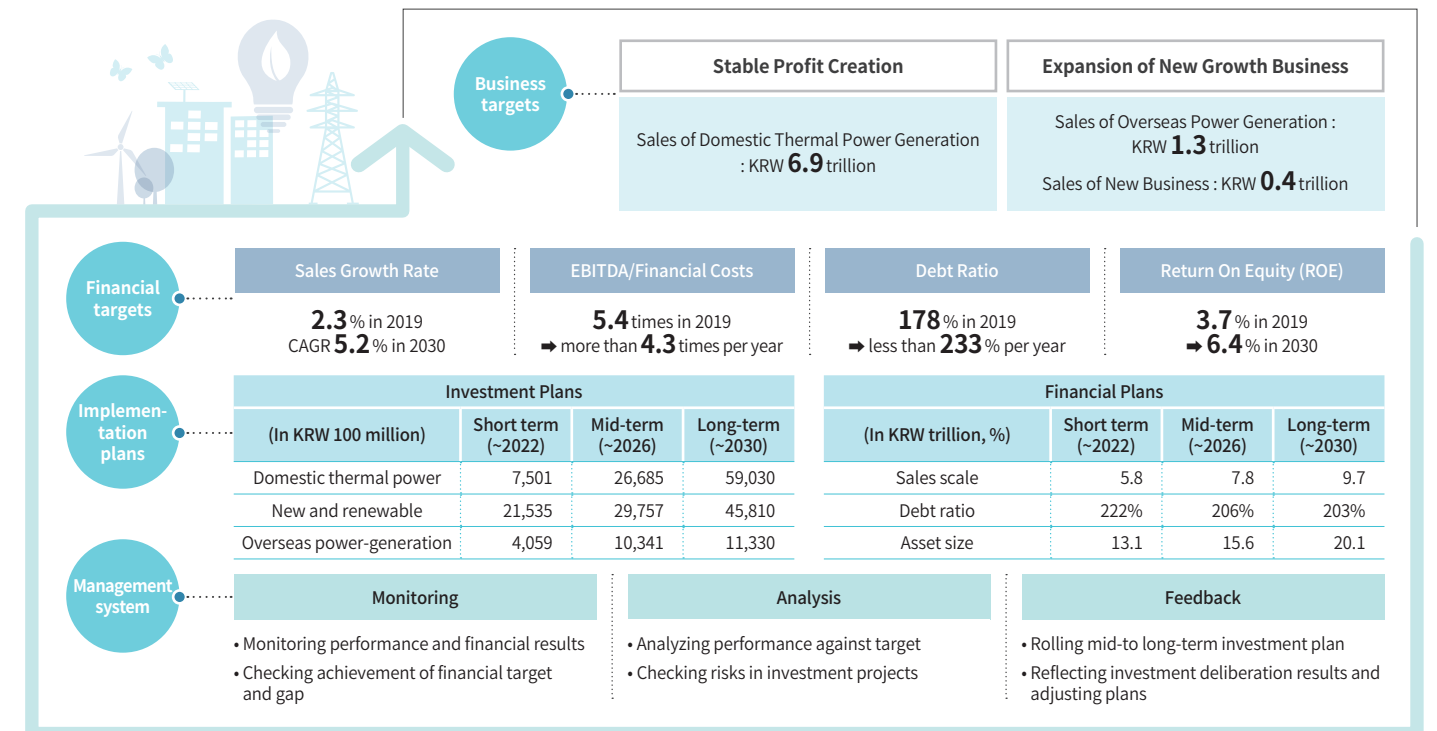
Stabilization of Bituminous Coal's Supply and Demand

The company has diversified its supply sources in order to reduce dependence on specific countries and to stabilize the supply and demand of bituminous coal. KOWEPO extended the import of Colombian coal to reduce dependence on Australia for its high-calorie coal. In order to secure a stable supply of low-calorie coal, the company increased the proportion of Russian coal and reduced that of Indonesian coal.

Creation of Financial Value

Mid- to Long-Term Financial Plans

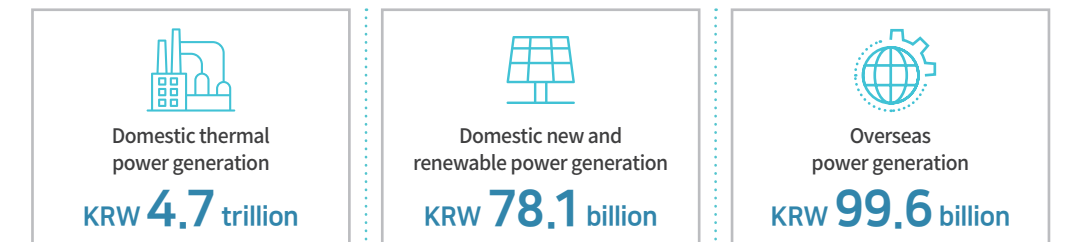
As investment in new and renewable power generation projects is increasing in accordance with the government's energy transition policy, and as old power plants are expected to be closed due to the decrease in demand for electricity and to the trend of coal phasing-out, KOWEPO has updated its financial management system to strategically achieve its business targets. It implemented the projects strategically by preemptively responding to such rapid changes in the external environment.



Income-Generation Performance

KOWEPO continues to generate profit by stably managing the existing domestic thermal power generation projects and by securing future new growth engines. New growth engines are secured through active expansion of domestic new and renewable power generation and overseas power generation projects.

(As of 2019)



※ Equity sales from equity investment project is included

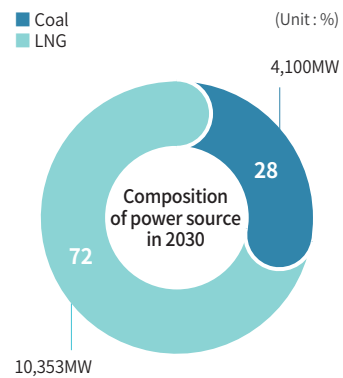
Improvement of Financial Structure

As of 2019, KOWEPO improved income of KRW 38.6 billion by increasing the power-generation capacity in order to secure financial soundness in response to the power plant shutdown situation. The company has secured additional cash flow of KRW 38.6 billion by reducing transportation and maintenance costs (KRW 260.9 billion), selling idle assets and canceling unnecessary projects, resulting in a total of KRW 338.1 billion of financial improvement.

Expansion of Eco-friendly Domestic Business

GRI 201-2, 203-1

Mid- and Long-term Goals



Thermal Power Business

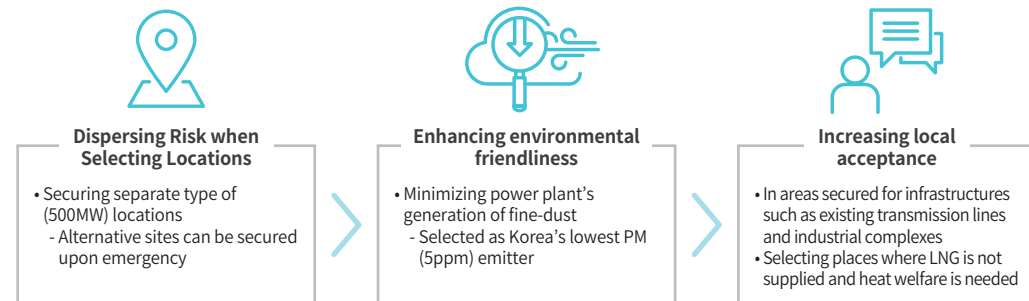
Roadmap for Mid- to Long-Term Thermal Power business

KOWEPO has established a domestic thermal power plant roadmap and has implemented the project to expand new high-efficiency combined cycle power plants, such as establishing a Korean gas turbine demonstration base.

	Short-term (2019)	Mid-term (2023)	Long-term (2030)
Securing business alternatives to coal-fired power generation	<ul style="list-style-type: none"> Securing alternative businesses for Taeon 1~4 units - Reviewing business feasibility such as infrastructure and local acceptance 	<ul style="list-style-type: none"> Installed capacity 1GW Starting construction of alternative Taeon 1,2 units Combined cycle plants Promoting additional substitution (Taeon 3, 4 units) 	<ul style="list-style-type: none"> Installed capacity 2GW Completing Taeon 1~4 units alternative businesses Preparing for Taeon 5,6 units alternative businesses
The nation's first gas turbine demonstration	<ul style="list-style-type: none"> Gas turbine capacity 270MW Establishing basic plan for construction of Gimpo Combined Heat & Power Plant based on gas turbine demonstration 	<ul style="list-style-type: none"> Installed capacity 408MW Starting demonstrative operation of Korean-type Combined cycle - Demonstration period: Two years 	<ul style="list-style-type: none"> Installed capacity 510MW Increasing capacity of Korean-type Combined cycle Newly developing of Korean-type Combined cycle power complex

Securing a New Gas Combined Cycle Power to Replace Old Coal-fired Power Plants

KOWEPO set strategic priority (three steps) and selected five community-friendly candidate sites in order to replace the aging coal-fired thermal power plants with new gas-fired power plants. KOWEPO plans to actively implement new projects by successfully carrying out the government's energy-transition policy and by coexisting with local communities.



Creation of Korea's First Domestic Gas Turbine Demonstration Base

KOWEPO is preparing to construct the Gimpo Combined Heat & Power Plant (408MW) to demonstrate a power turbine for the first time among power-generation companies in order to enhance the competitiveness of the domestic power-generation industry through localization of gas turbines. The construction of Gimpo Combined Heat & Power Plant is expected to start in the second half of 2020. Development of a domestic large-scale gas turbine (270MW) prototype was completed through the sharing of 2019 technical operation data, and technical risks resulting from localization have been supplemented, laying the foundation for successful construction.

WP History of Gas Turbine Localization



New & Renewable Energy Business

New & Renewable Energy Business Roadmap

KOWEPO established the 'New & Renewable Energy 3025 Roadmap' to invest KRW 6.26 trillion in order to expand new and renewable power generation facilities by 2030 and to increase the supply of new and renewable energy to 25% or more of total power-generation capacity. As such, KOWEPO is committed to becoming a leader regarding eco-friendly energy.

New and Renewable Energy 3025 Roadmap

	~2023	~2025	~2030
Volume of thermal power generation (GWh)	52,785	53,132	56,722
Volume of New & Renewable Power generation (GWh)	11,351	16,329	20,868
Supply ratio (%)	17.7	23.5	26.9
Installed capacity of New & Renewable Power generation (MW)	4,290	5,365	6,112
RPS execution rate (%)	11.5	15.5	28.0

Expansion of Photovoltaic Business Based on Private and Public Collaboration

Samyang Photovoltaic Power Plan, completed in June 2020 (located in Anmyeon-do, Taeon County, South Chungcheong Province), invested KRW 55.7 billion in approximately 220,000 square meters of fish farms and salt farms. It installed 17MW solar power-generation facilities and 40MWh energy storage system (ESS), thereby contributing to stable transmission of power. KOWEPO expects that it can create social value of about KRW 80 million annually with residents and collaborations with local residents by donating 400kW of village-type photovoltaic facilities through the Samyang Photovoltaic Power Project.



Samyang 17MW Solar Power

Implementation of Large-scale Offshore Wind Power Farms

KOWEPO is pursuing the 'Wando Jangbogo 400MW Offshore Wind Power Project' in Wando County, Jeollanam-do through cooperation with local governments, local companies, and fishermen. It is a model of maritime industry coexisting with offshore wind power, multi-purpose fish farms, and tourism. When the 400MW offshore wind power farm is constructed in 2026, it will be a representative new and renewable energy project, linking port with the fisheries and tourism industries. In addition, KOWEPO completed the construction of a 7.5MW offshore wind farm demonstration complex in the Southwest Sea, and is now preparing to commence the construction of 'Gunsan Ariul 500MW Offshore Wind Power' and 'Ansan Pungdo 200MW Offshore Wind Power Plant' to cultivate industries that can stimulate the local economy in Gunsan in cooperation with public institutions.



Jangbogo Offshore Wind Power

Implementation of Social Value Creating Fuel Cell Business

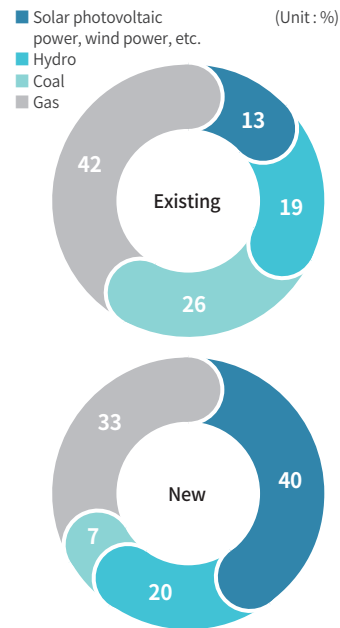
KOWEPO carries out fuel cell business mainly in unsold industrial complexes nationwide in order to create partnering values with local communities. This is done by sharing the burden of local governments resulting from the increase in unsold industrial complexes and creating high-quality jobs. In addition, the company is also pursuing a win-win project where KOWEPO, local farms, and collective energy providers benefit from utilizing the byproduct of generated heat during the power-generation process of fuel cell. The representative business, 'Smart Farm-Linked Fuel Cell Business', contributes to reducing energy costs and increasing income for farmers by supplying the heat produced as a byproduct to heating and cooling systems.



Seoinceon Fuel Cell 1-4 Stages

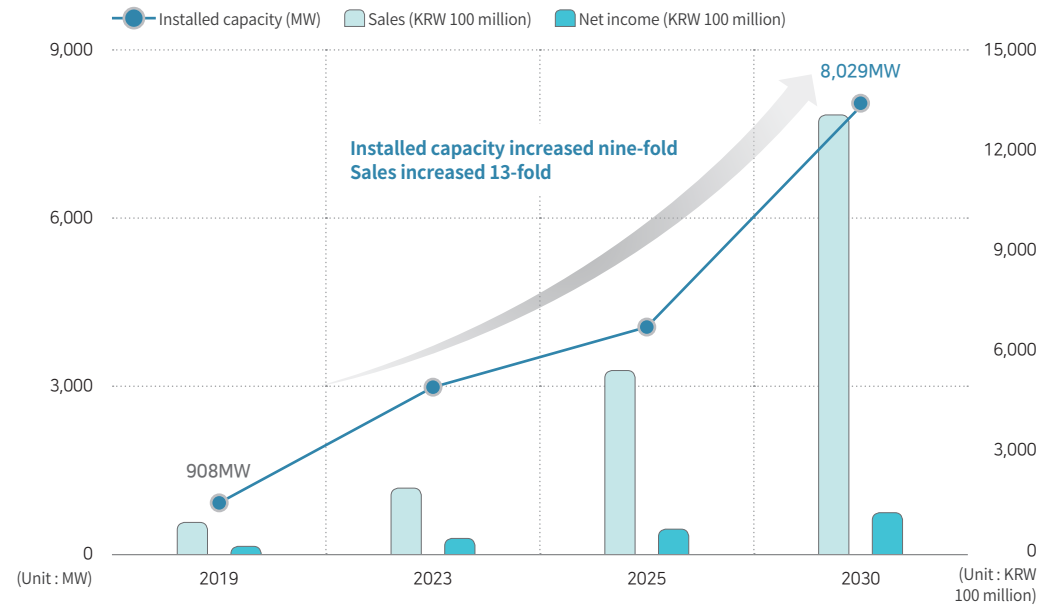
Expansion of Overseas Business

GRI 201-2



Mid- to Long-Term Overseas Business Roadmap

KOWEPO conducts projects with a view to achieving the 2030 Overseas Business Portfolio through a significant reduction of coal-fired power generation and intensive development of new and renewable power generation projects. This reflects the overseas power generation market environment, in which the phase-out of coal is accelerating.



Diversification of Overseas Business

Finland Adams Wind Power Project

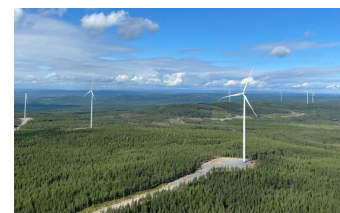
It is the first business of KOWEPO to enter the advanced new and renewable power generation market, its installed capacity is 73.2MW, and the company secured a 29.5% stake in June 2020. The power-generation complex is located near Oulu City, in the north of Finland, and is stably operating with a high FIT (Feed In Tariff) price guaranteed by the Energy Agency of Finland. The project is expected to generate net income of about KRW 2 billion annually.



Finland Adams Wind Power Plant

Swedish Cloud Wind Power Project

As a result of expanding business to the Nordic region after Finland, the new Swedish Cloud Wind Power Plant is located in central Sweden, with an expected installed capacity of 241MW. This project is currently under construction and is scheduled to be completed in the second half of 2020. As a long-term power sales contract (29 years) has been signed, stable sales are expected. KOWEPO plans to participate in this project as a strategic investor, performing on-site supervision before completion and managing power plant assets and O&M after the completion of construction. In addition, KOWEPO plans to advance throughout the European region by using its operations in Sweden and Finland as a bridgehead.



Swedish Cloud Wind Power Plant

U.S. KEC Gas Combined Cycle Power Project

As the first business of KOWEPO to enter the U.S Gas Combined Cycle Power-generation market, its installed capacity is 632MW. This project is located in Connecticut, USA, and KOWEPO plans to invest 50% of the shares. As this project is located near the shale gas field in the United States, power-generation costs are lower than those of a coal-fired power generation. It is expected to be responsible for the base load in the New England electricity market, and to generate stable revenue by generating annual income of \$300 million. KOWEPO plans to perform O&M duties, asset management, as well as construction management, and to actively explore additional projects in the U.S. market based on the success of this project.



U.S. KEC Gas Combined Cycle Power Plant

Key Issues

Strengthening New Business Capabilities



Smart Enterprise Leader Award



Completion Ceremony of Demonstration Plant

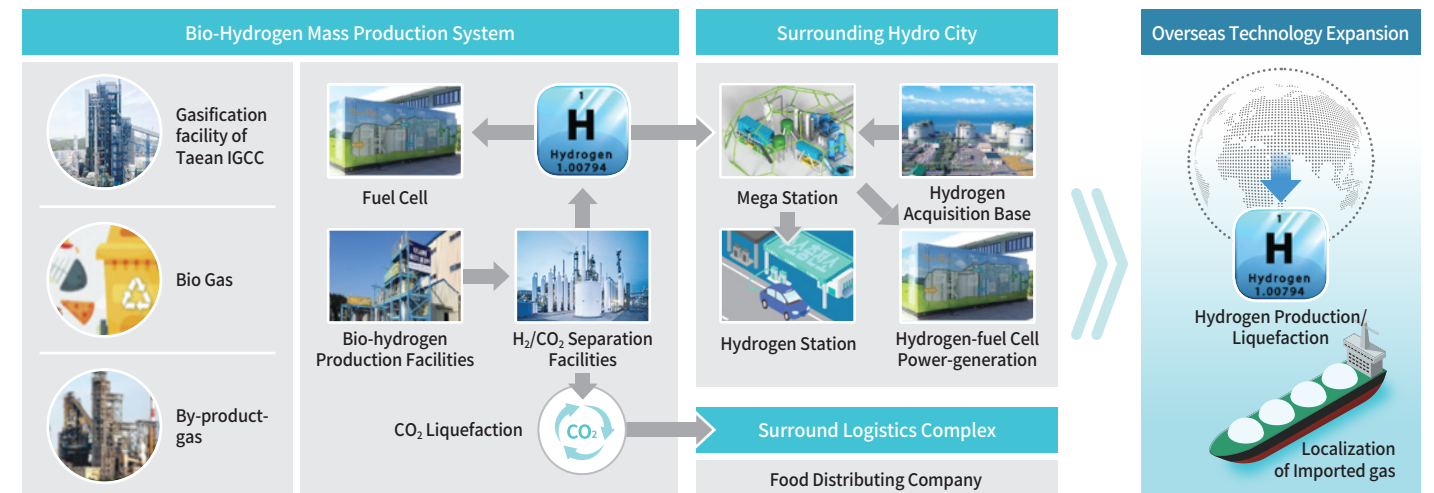
Development of New Business Models

Fostering the 4th Industrial Innovation Technology Ecosystem

Based on collaboration with various stakeholders, KOWEPO fosters the 4th industrial innovation technology ecosystem to strengthen KOWEPO's new business capabilities. The company actively conducts R&D, discovers new businesses, shares patents on technology development products, opens customized training courses for the 4th industrial era for small and medium-sized enterprises, and distributes new technologies through various seminars and exhibitions. This is to explore sales channels and to improve technological competitiveness of SMEs. In recognition of such efforts of KOWEPO, the company was awarded the [Smart Enterprise Leader Award] from the National Assembly in 2019.

Securing the Foundation for Commercialization of Hydrogen Production for the first time in Korea

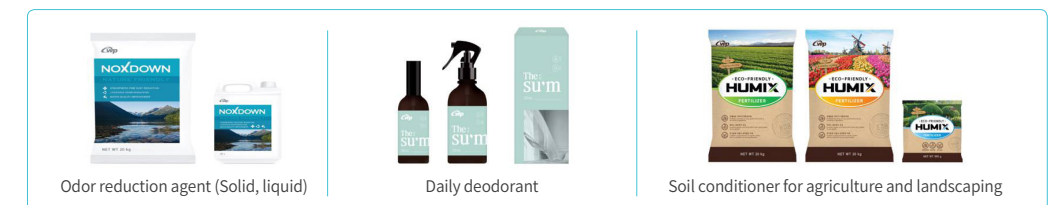
KOWEPO established the first hydrogen production commercialization base in Korea in order to proactively respond to the hydrogen economy. In November 2019, the company held the completion ceremony of the [Hydrogen Production Demonstration Plant Using IGCC Syngas and Marine Microorganisms]. The completed demonstration plant is the world's largest bio-hydrogen production facility, capable of producing approximately 330 tons of hydrogen per year. KOWEPO plans to upgrade the demonstration plant facilities and verify the long-term operation reliability to develop it into an [Export Merchandising Project]. As such, the company plans to create a new business model that introduces hydrogen importation from overseas into Korea through private companies and overseas expansion to lead the hydrogen economy.



Commemoration of the Establishment of the 1st In-house Venture

Establishing and Fostering In-house Venture

Since 2018, KOWEPO has enacted rules for operating internal ventures to foster and support internal ventures, sought and begun commercialization of internal employees' creative ideas, and created an organization dedicated to support internal ventures. This was in order to strengthen new business capabilities through innovation and exploration of new business models. The company has engaged in various activities, such as creating a first internal venture [Cell Bio Co., Ltd.] in 2019, and launching three eco-friendly products (WP-Knox Down, etc.) based on the R&D results. In 2020, the company finally selected the two in-house venture teams through an internal competition of innovative ideas and deliberation and evaluation of the internal venture (working-level) committee. The company has held the launching, the 2nd internal venture teams and the agreement ceremony.



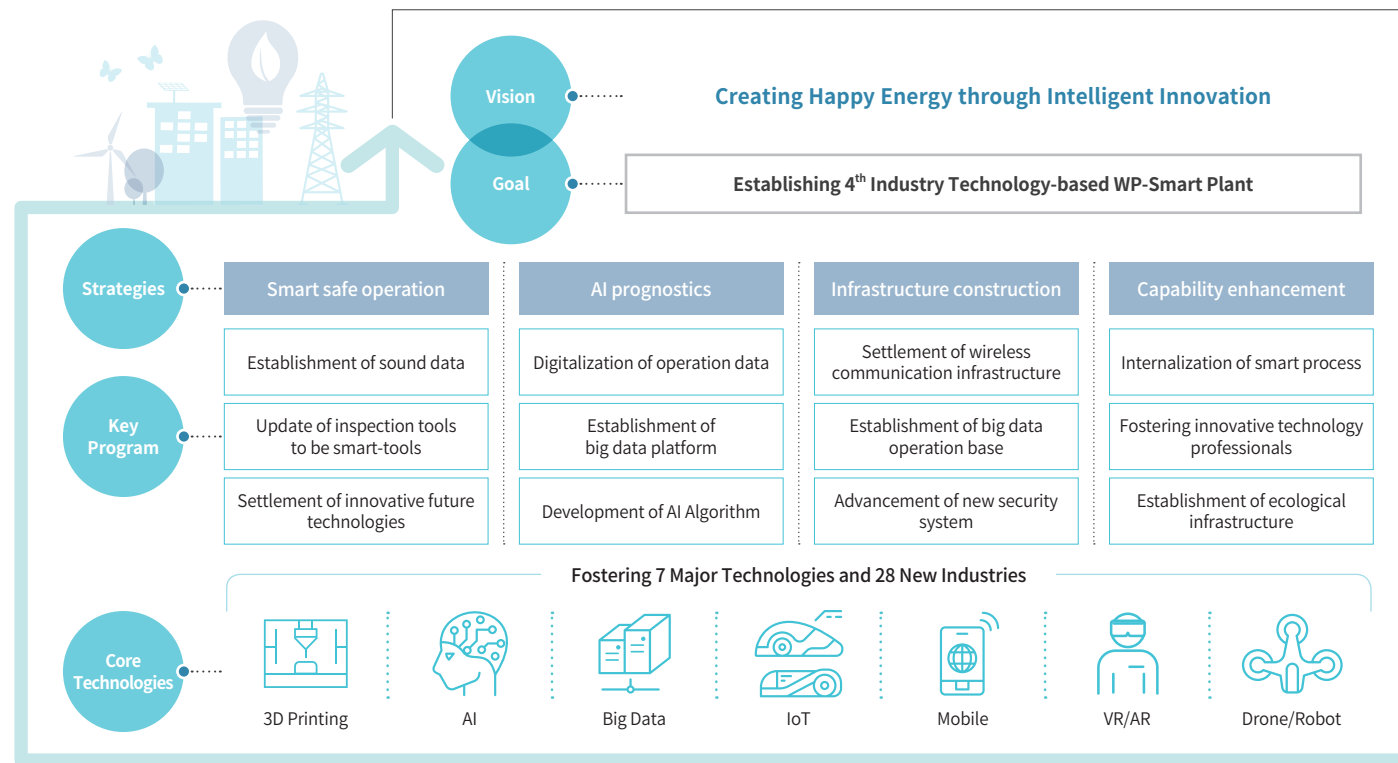
Key Issues

Strengthening New Business Capabilities

Leadership in the 4th Industrial Revolution

4th Industrial Revolution Technology-Based Long-term I-WP 4.0 Technology Innovation Roadmap

KOWEPO established the 4th Industrial Revolution Strategy team, an organization dedicated to the 4th Industrial Revolution. KOWEPO has also established a mid- to long-term 4th Industrial Technology Innovation Roadmap (I-WP 4.0) to build a smart power plant that combines power-generation operation technology and the 4th industrial revolution technology. The I-WP 4.0 strategic plan consists of four major smart operation strategies, AI predictive diagnosis, infrastructure construction, capacity building, 12 key programs, and seven core technologies. The company plans to develop a total of 377 different technologies by 2030. Currently, KOWEPO is focusing on the operation of smart power-generation facilities using mobile, drone, 3D printing, etc., and actively developing various high-value-added new business models in the power-generation industry by developing various artificial intelligence power-generation operation solutions based on accumulated 4th industry technologies.



Application of the 4th Industrial Revolution Technologies

Demonstration of Power-generation Parts using 3D Printing

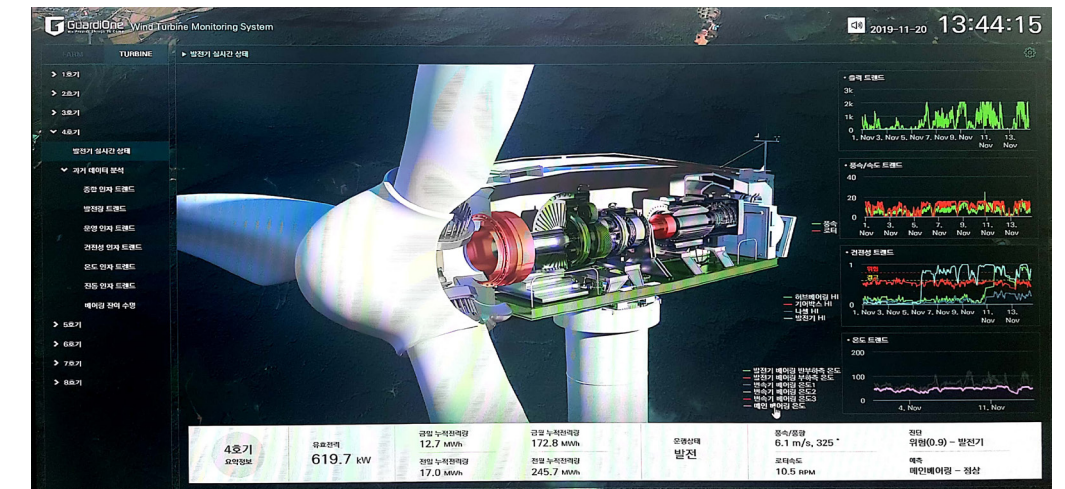
KOWEPO manufactures previously foreign-made parts that had been difficult to localize by using the 3D printing method. In addition, it annually runs a demonstrative business project that inspects the reliability and efficiency of 3D printing of power generation parts. The company succeeded in manufacturing eight types of 3D-printed power generation parts in 2018 and 15 types in 2019. KOWEPO selected the optimal 3D printing material through conducting physical property analysis and evaluation of the operating environments of power-generation parts to secure reliability. KOWEPO also manufactures a lot of the same parts to improve cost efficiency. As such, the company is undertaking various attempts to expand the application of innovative technologies in the field. In addition to the demonstration test, KOWEPO plans to use 3D printing's heterogeneous material multi-layering technology to produce a new concept power-generation parts to replace imported equipment for the first time in Korea.



3D Printing Demonstration Business

Development of AI-based Prognostics Technology

KOWEPO is developing AI prognostics technology that can predict the failure of power-generation facilities and can perform preventive maintenance. AI prognostics is a core technology of the 4th Industrialization that can maximize operational efficiency by shaping the entire design, operation, and preventive maintenance cycles of boilers, turbines, and generators, the main equipment of power plants, in the digital space by combining them with Internet of Things (IoT) and big data platform technologies. KOWEPO is developing a standard platform for power-generation and a variety of diagnostic and predicting programs in cooperation with the power group, and is developing and operating a wind power generator failure prediction system. The company expects that it can apply AI and big data technologies to power plants to contribute to the improvement of facility operation rate and power quality through identification of optimal operating conditions and maintenance points. The company plans to further accelerate the realization of smart power plants by opening KOWEPO's AI Technology Center and nurturing professionals.



AI-based Wind Power Generator Failure Prediction System

Fostering WP-Innovation Manpower

KOWEPO has established the [WP-Innovation Manpower Roadmap] for smart power plants in accordance with the 4th Industrial Technology Innovation Roadmap (I-WP 4.0) and has actively nurtured professionals of seven core technologies.

WP-Innovation Manpower Roadmap



As of 2019, out of all power generation companies, KOWEPO retains the most personnel who have acquired qualifications relating to core Industry 4.0 technologies. The company invited experts from various fields, such as big data, to hold a [Future Technology Innovation Seminar] and to spread Industry 4.0 technology culture to all of its business locations.



ISSUES
02



Environment

The Importance of Environmental Issues

Both in Korea and in the global community, interest in and concern about environmental issues are continuously increasing. In particular, interest in the importance of climate change and active countermeasures is gradually increasing to the extent that it is no exaggeration to say that it is becoming the biggest global topic. The international community has launched a new climate system to reduce greenhouse gas emissions, and global leading companies are expanding the implementation of UN SDGs. In a situation where the environment and ecosystem are under threat due to indiscriminate development, the transition to environmentally friendly business methods is no longer an option, but a necessity.

KOWEPO's Response

KOWEPO is aware of releasing environmentally hazardous substances while consuming large amounts of resources, due to the nature of being a power-generation industry, and strives to minimize the emissions. KOWEPO has set up a carbon management master plan to implement greenhouse gas reduction activities in all business processes, and the company actively responds to climate change by promoting various win-win greenhouse gas reduction projects in domestic and overseas markets. In addition, KOWEPO pursues sustainable development by seeking ways to reduce emissions of environmental pollutants such as fine dust and to recycle resources.

Target Relating to UN SDGs



KOWEPO HIGHLIGHTS



Greenhouse Gases Reduction
(As of 2019)

197 million tons



Air-Pollutant Reduction
(As of 2019)

69.6%



Waste Recycling
(As of 2019)

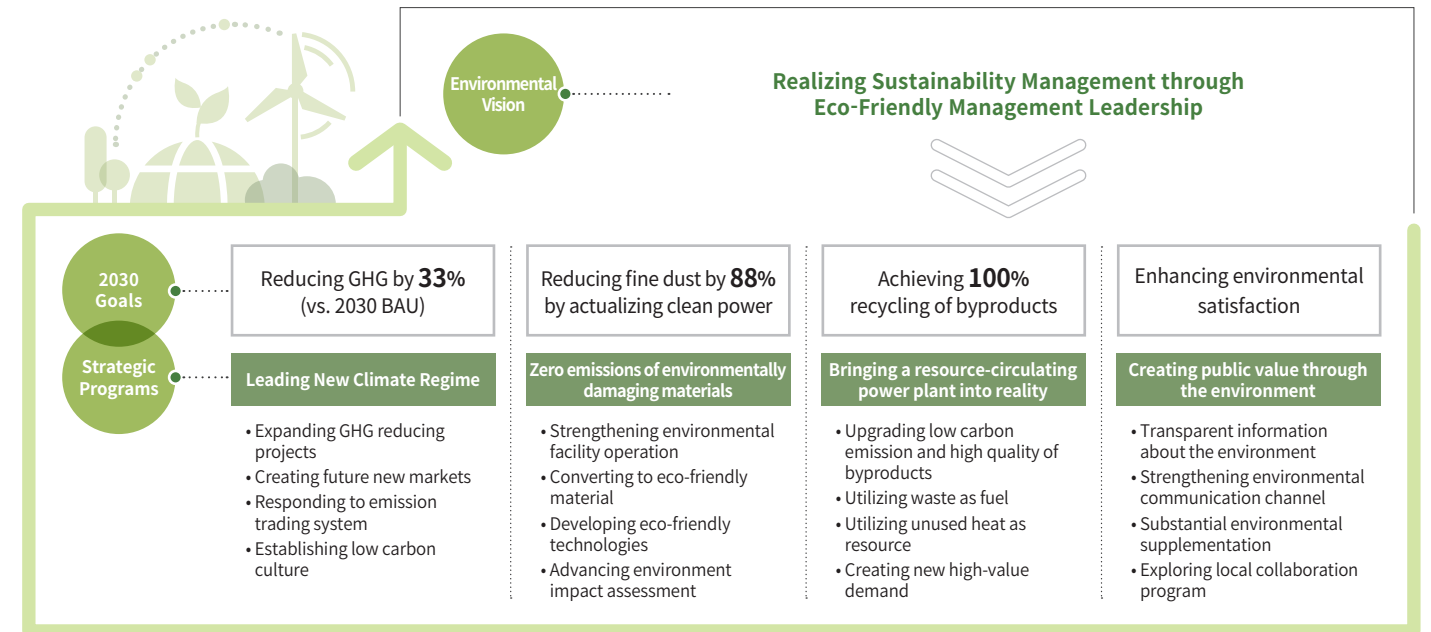
79%

Key Issues

Environmental Vision and System

Environmental Vision System

KOWEPO aims to reduce greenhouse gas emissions by 33% compared to BAU (Business As Usual) and fine dust by 88% while increasing the recycling of byproducts by 100%. It also seeks to enhance environmental satisfactory levels by 2030 under the environmental vision of Realization of Sustainability Management through 'Eco-Friendly Management Leadership' linked to KOWEPO's Value System Vision. To actively practice sound environmental management, the company has set four strategic programs and 16 action plans.



Environmental Policy

All employees of KOWEPO committed themselves to environmental policies as follows and pledge to take the initiative with a firm commitment to achieve the company's environmental vision.

- 1 We will minimize emissions of environmental pollutants including fine dust through continuous improvement of environmental facility performance and introduction of new technologies in order to create a safe and comfortable living environment for the people.
- 2 We will actively strive to increase the value of byproducts, diversify new recycling projects, and use waste as fuel in order to realize a resource-cycling eco-friendly power plant.
- 3 We will actively strive to expand greenhouse gas reduction projects, respond to emissions trading, and establish a low-carbon culture in order to respond to New Climate Regime.
- 4 We will faithfully implement its compliance obligations such as environmental laws, environmental agreements, and voluntary agreements related to the environmental management system.
- 5 We will contribute to realizing social values through open communication such as strengthened communication channels with stakeholders, transparent environmental information disclosure, and various environmental preservation activities.

June 2018



President & CEO of KOWEPO Co., Ltd.
Kim Byung-sook

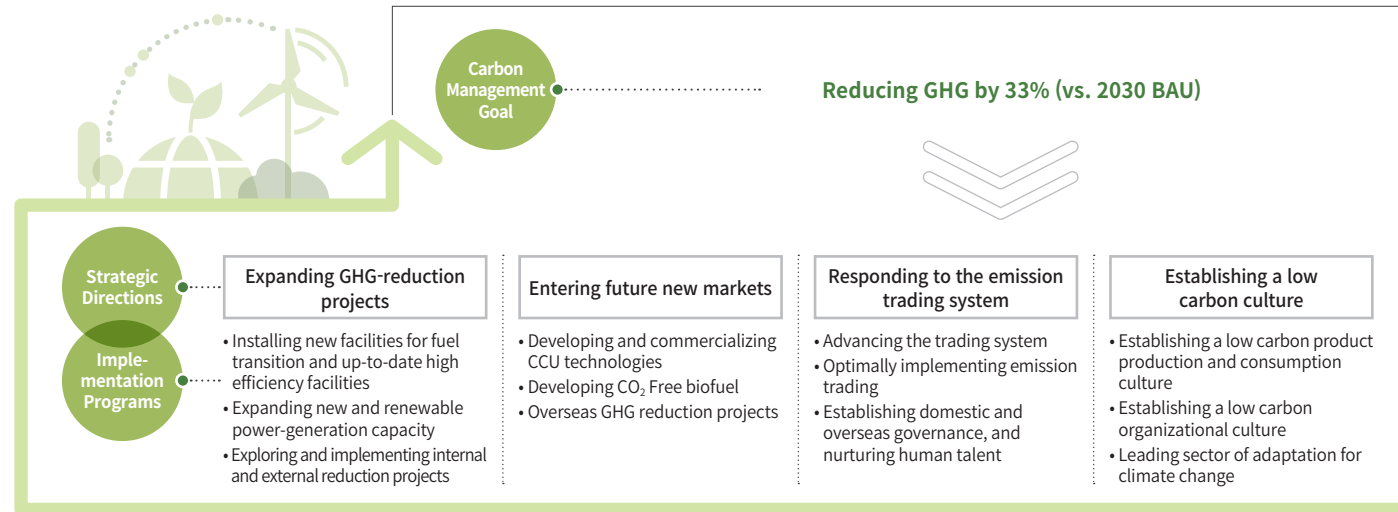
Key Issues

Response to Climate Change

GRI 201-2, 305-5

Carbon Management Master Plan

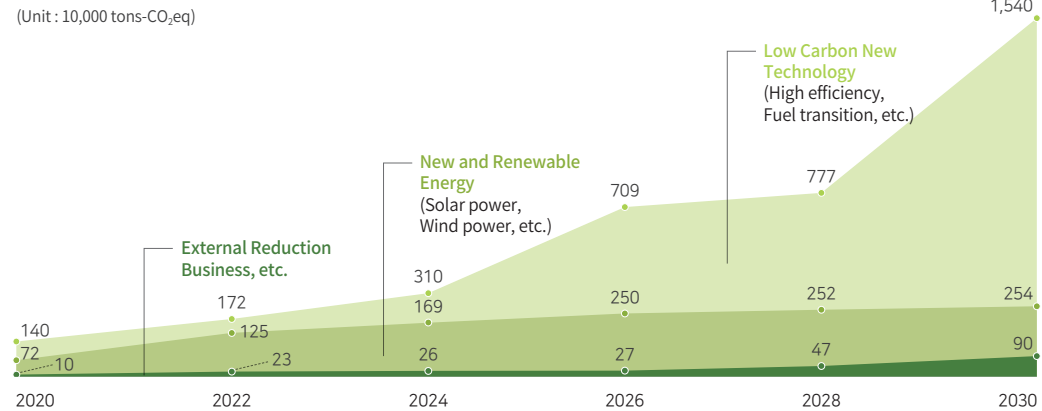
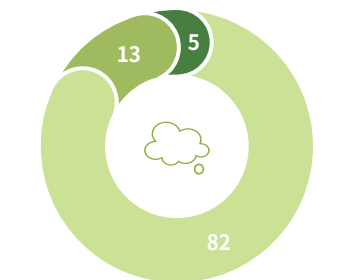
KOWEPO has re-established the 'Carbon Management Master Plan for New Climate Regime' by reflecting changes in national energy and climate change policies in order to establish and actively implement the carbon management system that leads the new climate system. The company has raised the target of 2030 emissions-reduction from 30% to 33%, and plans to reduce 18.84 million tons by reflecting the increase in domestic reduction obligations in the 'Amendment to National Greenhouse Gas Reduction Basic Roadmap.'



2030 Reduction Option

(Unit : %)

- Low-carbon New Technology
- New and Renewable Energy
- External Reduction Business

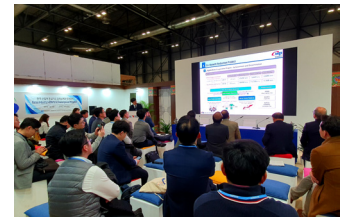
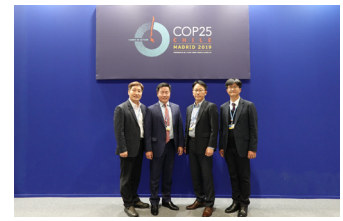


Performance at UN

KOWEPO represented Korea's power-generation industry at the 25th United Nations Framework Convention on Climate Change (UNFCCC) COP25 held in Madrid, Spain, on December 10, 2019 (local time) and introduced "BEST Cases of Greenhouse Gas Reduction," and "World-class Carbon Dioxide Capture and Conversion Technology Development Cases", and received keen attention from experts. KOWEPO will continue to develop and promote new greenhouse gas reduction collaboration models as a leading company that creates social values, as well as one that reduces national greenhouse gas emissions.

- Presentation of Best Cases at the 25th United Nations Framework Convention on Climate Change (UNFCCC) (Spain) (December 2019)
- United Nations Framework Convention on Climate Change CTCN¹⁾ approved as a specialized climate technology agency (January 2020)

1) CTCN : The Climate Technology Center and Network (CTCN) is the implementing body of the Technology Mechanism under the United Nations Framework Convention UN Framework Convention on Climate Change, and it supports technical cooperation, development and transfer to developing countries

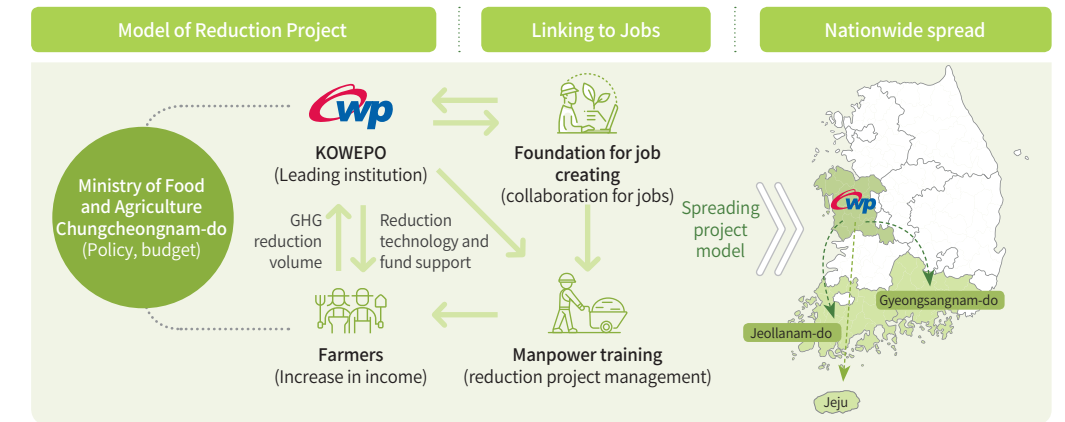
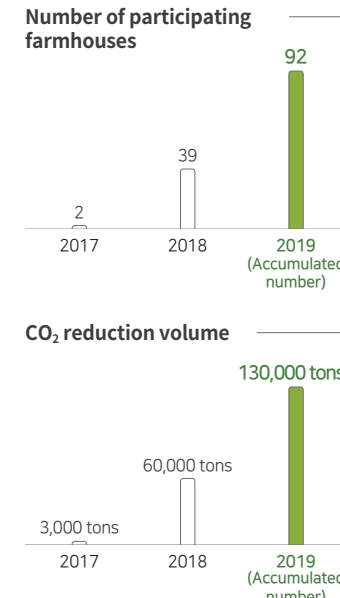


Presentation of Best Cases at United Nations Framework Convention on Climate Change

Greenhouse Gas External Reduction Business

Agricultural Field

KOWEPO contributes to the national reduction of greenhouse gases by reducing the amount of fossil fuels used by farmers by developing the nation's first [farmhouse-company greenhouse gas reduction win-win business model]. As of 2019, as many as 92 farmhouses joined forces by reducing CO₂e of 130,000 tons. In recognition of these efforts, the Ministry of Trade, Industry and Energy selected the business as the 'Excellent Case for Energy Transition in 2019.'



Forest Field

In August 2019, KOWEPO signed a joint cooperation agreement with Gangwon-do for mid-to long-term greenhouse gas emissions reduction and carbon offsetting, and created the [Carbon Off-set Forest of Peace] near Songjiho coast in Goseong in April 2020. In particular, the company established a virtuous cycle of new social contribution by donating the credits secured through this project to Gangwon-do and reinvesting the profits to create a forest.



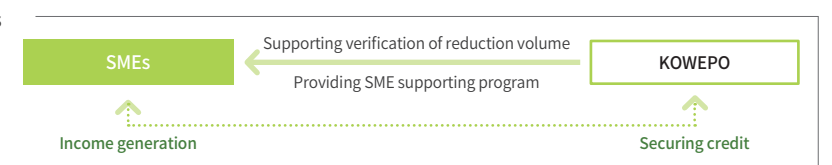
Creating Carbon Off-set Forest of Peace



SMEs Supporting Field

KOWEPO develops and promotes job-creating greenhouse gas reduction projects and greenhouse gas reduction projects for mutual growth in order to contribute to the creation of new jobs by increasing the income of SMEs.

Mutual-Growth Types (Supporting conversion of credit)



Field of Buildings

KOWEPO signed the [Agreement for Reducing Greenhouse Gas Emissions in the Building Sector] with the Korea Energy Agency to realize sustainable energy welfare. KOWEPO also supported zero-energy buildings as joint facilities for those vulnerable to climate change such as heat waves and cold waves, and implemented greenhouse gas reduction projects. As a pilot project, the company selected Anheungseong Village in Taean County and provided zero energy buildings to the town hall and installed LED lights in Anheungseong Castle.



Supporting SMEs in converting carbon credits



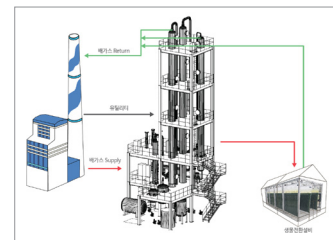
Agreement Signing Ceremony

Key Issues Response to Climate Change

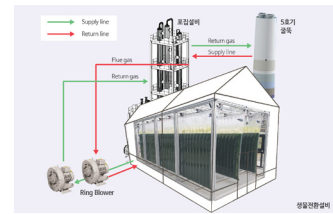
Securing and Demonstrating CCU Technology

KOWEPO continued to develop new technologies to reduce greenhouse gas emissions, completed the construction of a plant for carbon dioxide capture and conversion complex demonstration in March 2019, and realized world-class CCU technology through successful demonstration of CO₂ capture and conversion technology. Currently, the company has applied for a patent on technology secured during the demonstration process, and is pursuing technology transfer to and from Korea to promote a new business related to CO₂ capture. With the goal of establishing a large-scale commercialization by 2023, the company plans to promote CCS integration demonstrations among various ministries (Ministry of Industry, Trade and Resource, Ministry of Environment, etc.).

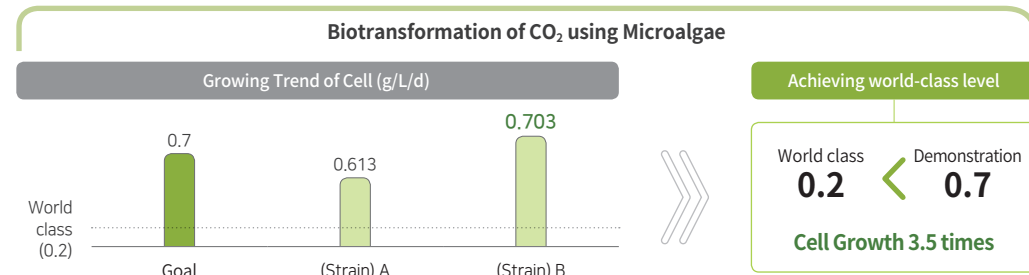
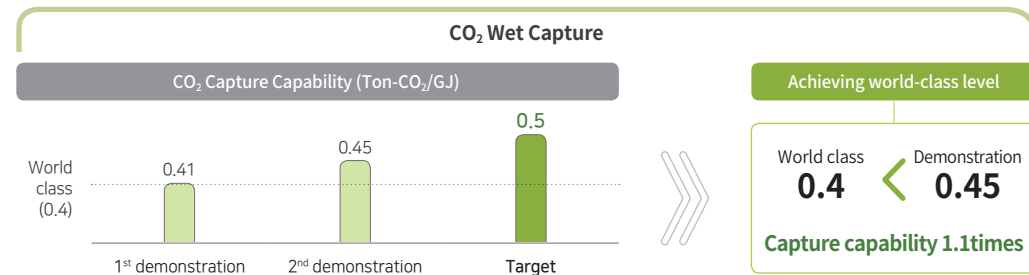
* CCU(S) : Carbon Capture Utilization & Storage, Capture from CO₂ sources → Convert it to useful substances



Wet Capture Facility Concept Mapping



Biotransformation Demonstration Facility Concept Mapping and Chart



Building a Low-Carbon Culture

Implementing KOWEPO's independent low-carbon activities (WP Carbon Mileage)

For the first time in Korea, KOWEPO has developed a voluntary greenhouse gas reduction program at the corporate level to induce all employees to participate in the low-carbon activities. The company conducts [1Person-1 Ton CO₂ Reduction] campaign and publishes climate change briefs in order to lay the groundwork for low-carbon practice activities involving employees. KOWEPO encourages greenhouse gas emission reduction in people's daily lives (reducing electricity, water, and gas consumption by more than 5% compared to the same period last year, purchasing grade 1 energy efficient home appliances, etc.) by developing and implementing a low carbon practice model [WP Carbon Mileage] system and providing accumulated mileage incentives to employees.



Climate Change Briefs

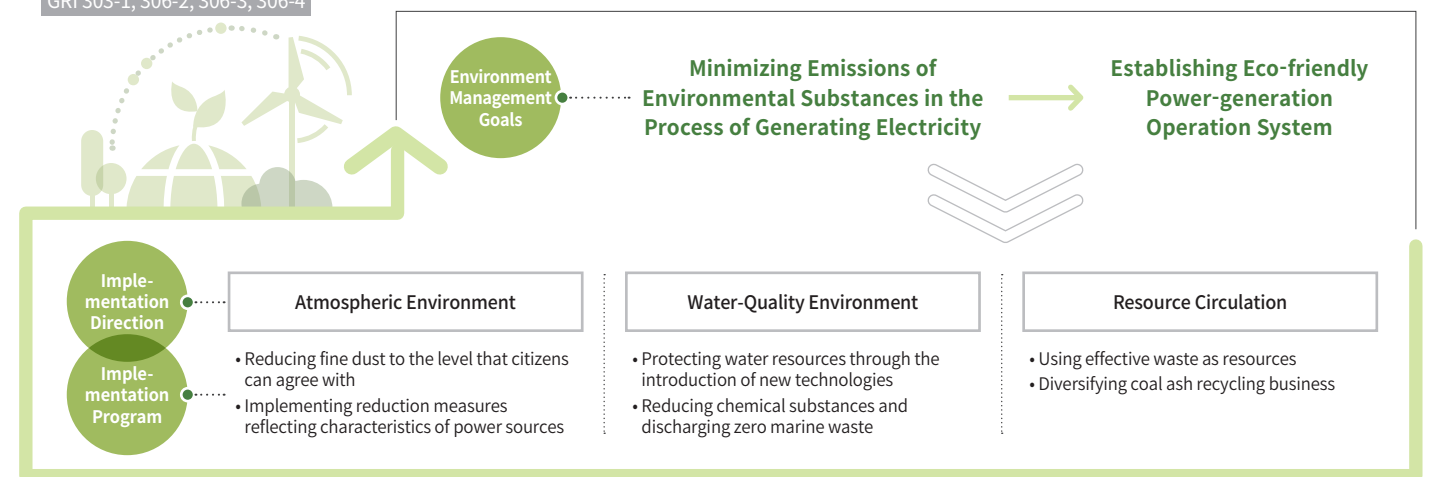


Key Issues Reduction of Environmental Pollutant Emissions

GRI 303-1, 306-2, 306-3, 306-4

Environmental Management Goals

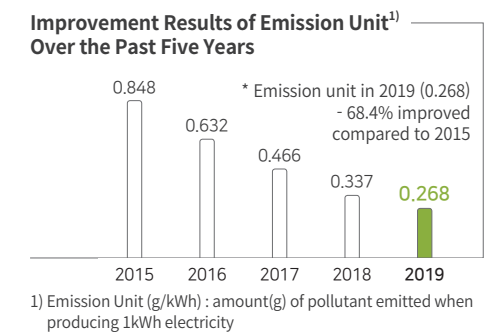
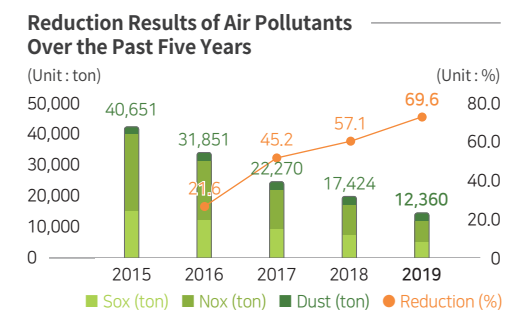
KOWEPO sets environmental management targets, identifies implementation programs divided into atmospheric environment, water-quality environment, and resource circulation to convert into a company-wide, eco-friendly development system, and to proactively introduce eco-friendly technologies such as fine dust reduction technology. KOWEPO makes clean power plants by minimizing emissions of environmental substances in the process of generating electricity.



Atmospheric Environment

Implementation of Reduction Measures for Fine Dust by Reflecting Characteristics of each Power Source

KOWEPO has been reducing emissions of air pollutants by 21.6% in 2016 compared to 2015; by 45.2% in 2017; by 57.1% in 2018; and by 69.6% in 2019 — at all power plants by implementing fine dust reduction measures that meet the characteristics of each power sources such as coal-fired power, LNG combined cycle, and heavy oil heating power.



Coal-Fired Thermal Power

In the coal-fired thermal power-generation sector, KOWEPO has significantly improved emission concentrations to less than 30% of legal standards that were strengthened in 2019 by maximizing the operation of, and intensively reinforcing, its environmental facilities, such as desulfurization, denitrification, and dust collection facilities, to standards exceeding the design efficiency. KOWEPO has also introduced cyclone desulfurization technology for the first time in Korea.

Combined Cycle/Heavy Oil Heating Power

KOWEPO takes customized measures for combined cycle/heavy oil heating power plants considering the location in the metropolitan and urban areas and their frequently maneuvering characteristics. Gunsan Combined Cycle Power Division preemptively introduced the latest high-efficiency denitrification facility to reduce about 77% of nitrogen oxides (20.5 → 4.7ppm), while Pyeongtaek Thermal Power Complex Division converted heavy fuel oil into LNG to reduce about 84% of fine dust (143 tons to 22.2 tons).

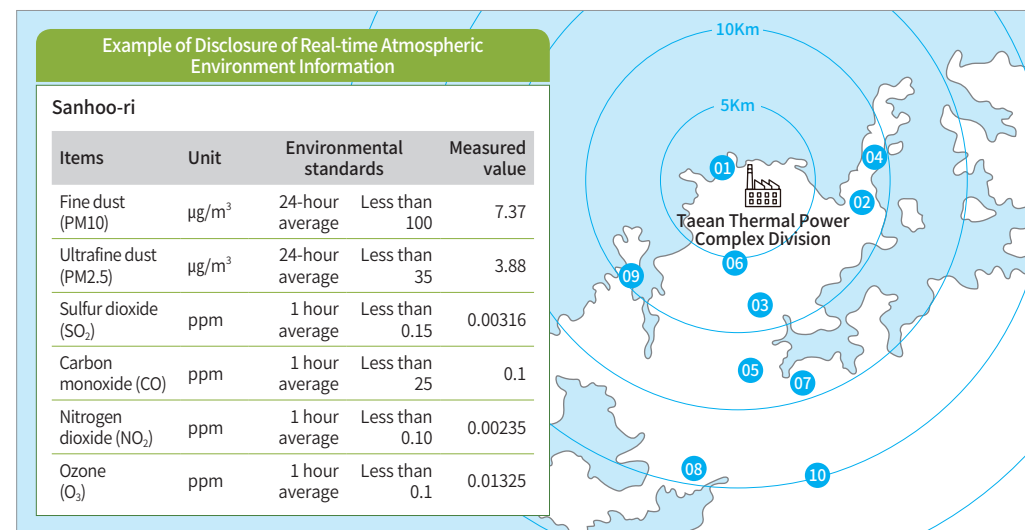
Key Issues

Reduction of Environmental Pollutant Emissions

Disclosure of Atmospheric Environment Information

KOWEPO operates 10 atmospheric environment concentration measurement networks in the surrounding area to analyze the effect of fine dust on the surrounding areas of the power plant, and the results of the measurement are disclosed in real time through the environmental display panel operated by the local government and on KOWEPO's website. The atmospheric environment concentration measurement network operated by KOWEPO applies the same installation specifications and management standards as the national measurement network, and the company plans to continuously expand environmental services to the public by improving it as an environmental information disclosure system that meets their expectations.

Locations of 10 Atmospheric Environment Concentration Measurement Networks



Water-Quality Environment

Introduction of New Technology for Water and Wastewater Processing

KOWEPO implements the improvement of the 'pure water production-waste water treatment-water recycling system' that applied new technologies in order to protect water resources and operate a safe power plant. The aging pure water production and wastewater treatment facilities plan to introduce a membrane filtration¹⁾ process that minimizes the use of chemicals, and the desulfurization wastewater treatment facility replaces a complicated 'physical-chemical-biological treatment method' with evaporation concentration facility which uses less chemicals. KOWEPO plans to install additional wastewater reclamation and reusing facility to use whole wastewater for power generation. If the performance of pure water production and wastewater treatment facilities is improved and the establishment of new wastewater reclamation and reusing facility is completed in 2022, the use of chemicals is expected to be reduced by 400 tons per year, and the power-generation water will be saved by 500,000 tons per year.

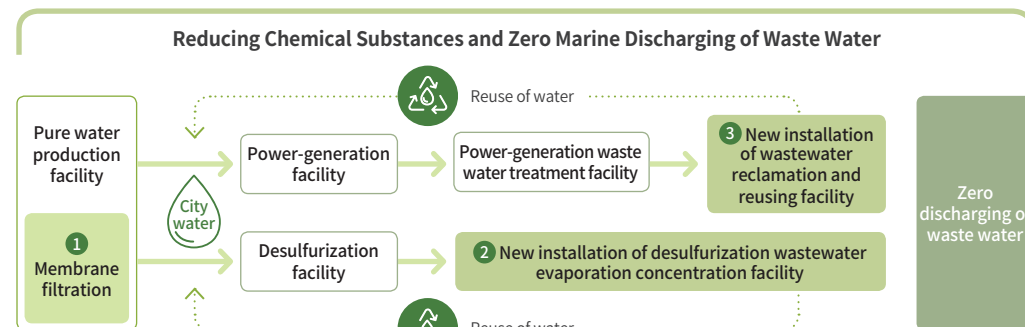
1) Membrane filtration : Process of filtering (out) impurities from liquid (water+impurities) using membrane



Bird's-eye view of zero desulfurization wastewater discharging system



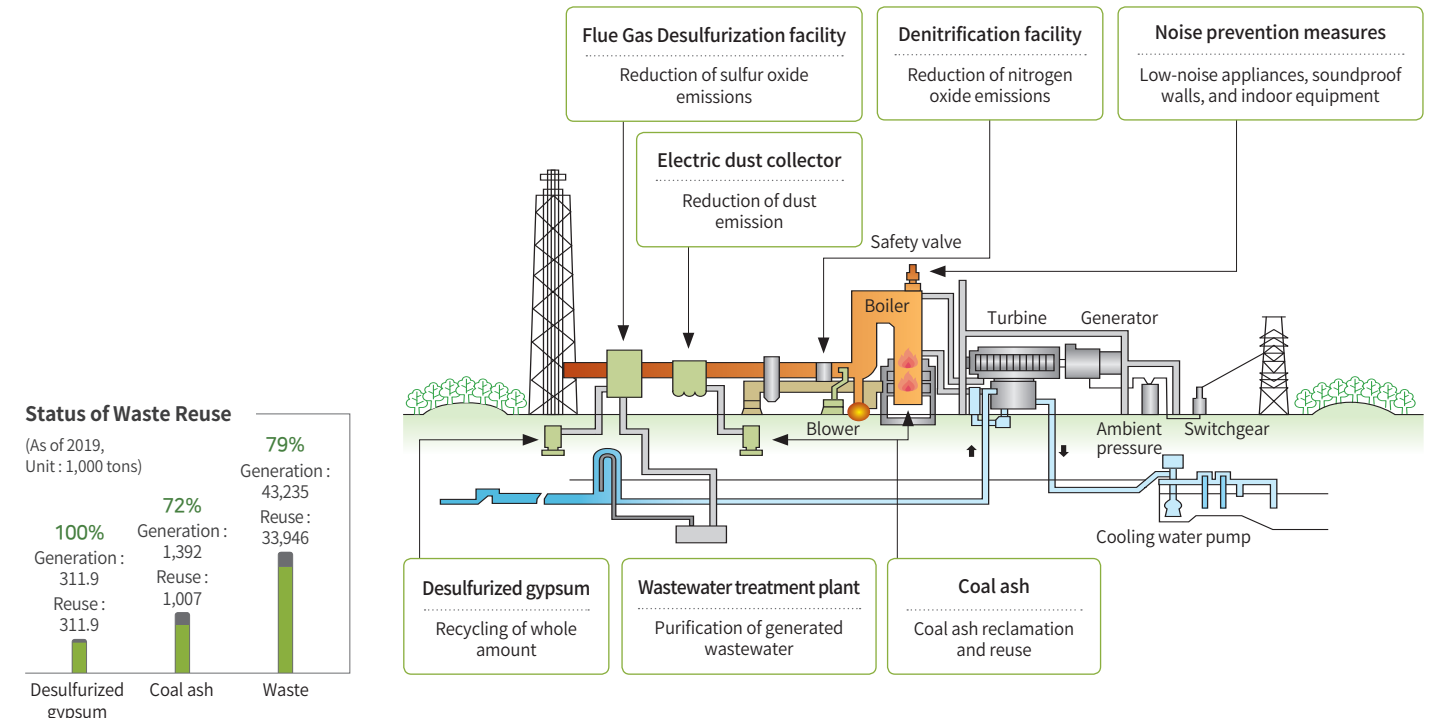
Wastewater reclamation and reusing facility (plan to install)



Resource Circulation

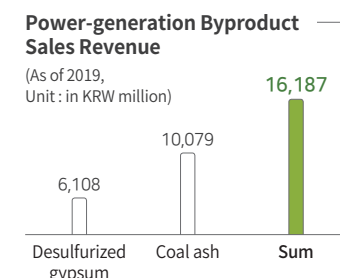
Resource Recycling Power Plant

KOWEPO is actively recycling power-generation byproducts, such as coal ash and desulfurization gypsum, generated during the electricity generation process, and is achieving resource-cycling power plant operations by removing pollutants to use as effective resources.



Expansion of the Power-generation Byproduct Recycling Market

KOWEPO is carrying out various research projects based on industry-academia-research cooperation in order to increase the recycling of byproducts of power plants. Through this, KOWEPO is developing various technologies and exploring new businesses. In particular, KOWEPO has developed the artificial basalt manufacturing technology using landfill ashes, and the company looks forward to expanding its use as building materials and stepping stones. In addition, KOWEPO pursues high-quality desulfurized gypsum and sulfuric acid and actively implements the national resource recycling policy by adding new recycling business for refined ash produced with KS products while creating added values such as generating sales revenue from byproducts.



Collaboration Organization	Details of Development
Sambo Engineering	Development of mineral fiber manufacturing technology using brown gas
Institute for Advanced Engineering	Development of Geopolymer production technology using coal gasifier applied slag
Korea Institute of Geoscience and Mineral Resources	Development of artificial basalt (building materials, stepping stones, etc.) manufacturing technology
Gunsan University	Development of filling materials for road excavation and recovery pond ash utilization technology
Korea National University of Transportation	Development and commercialization of construction materials using coal gasification application slag

ISSUES
03



Safety

The Importance of Environmental Issues

A serious and unexpected disaster that happened in December 2018 damaged the company's image, inducing mixed scolding from all sectors of society and giving the lesson that "Safety is the core value of a company that cannot be compromised with anything." The government also repeatedly emphasizes that the public institution should shift the management paradigm from profits to life and safety. Therefore, creating a [Safe and happy workplace for everyone] has become a top management goal that must be achieved for sustainable growth of KOWEPO.

KOWEPO's Response

The management of KOWEPO considers on-site safety management as the top priority and strives to communicate with on-site workers as well as to inspect high-risk areas. In addition, for the fundamental prevention of safety accidents, the company reorganizes the organization to transfer the safety department at the head office to the direct control of the president, creating a safety organization dedicated to each plant. KOWEPO makes diverse efforts such as making a team of two workers mandatory, prohibiting worker with experience under six months from working alone, and investing KRW 20 billion to expand safety facilities in the workplace. The company will not cease its efforts until the day the company realizes the safest power plant in Korea.

Target Relating to UN SDGs



KOWEPO HIGHLIGHTS



Deaths
(As of 2019)

0 persons



Industrial Accident Rate
(As of 2019)

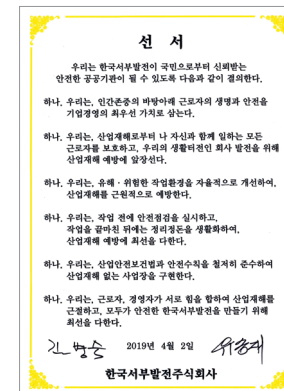
0.05%



National Infrastructure System
Disaster Management Evaluation
(Ministry of Public Administration
and Security in 2019)

A

Key Issues Safety Management



Written Statement of Safety Resolution Ceremony

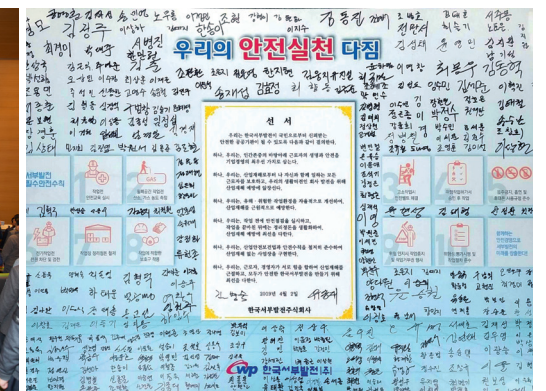
Establishment of Enterprise-wide Safety Management System [Safety First]

Safety-First Management

KOWEPO makes enterprise-wide efforts to make the safest and happiest power plant in Korea by practicing safety-first management. In 2019, KOWEPO held a safety resolution ceremony by declaring the 'Safety-first management value' jointly with the labor union, thereby establishing a safety and health management policy and strengthening the foundation to achieve the goal of becoming a 'Global Top-Class Safety Company'.



Safety Resolution Ceremony 1



Safety Resolution Ceremony 2

Safety and Health Management Policy

To become the safest power-generation company leading the power industry, KOWEPO is committed to actively practicing safety and health management activities so that it can successfully promote enterprise-wide safety and health management and implement consistent innovation.

- Firstly, we must establish a world-class safety and health management system and secure the best safety and health level through a corporate activity that prioritizes safety and health.
- Second, head-office and the business division must establish safety and health targets and operate an efficient safety and health management system through periodic monitoring and improvement activities.
- Third, all employees must achieve zero-accident and zero-disaster targets by complying with safety and health laws and regulations and eliminating all risk factors incurred in the course of operating the company.
- And finally, we must do our best to increase corporate value and fulfill social responsibility of customer satisfaction through partnerships with cooperation and communication through consultation and engagement with workers.

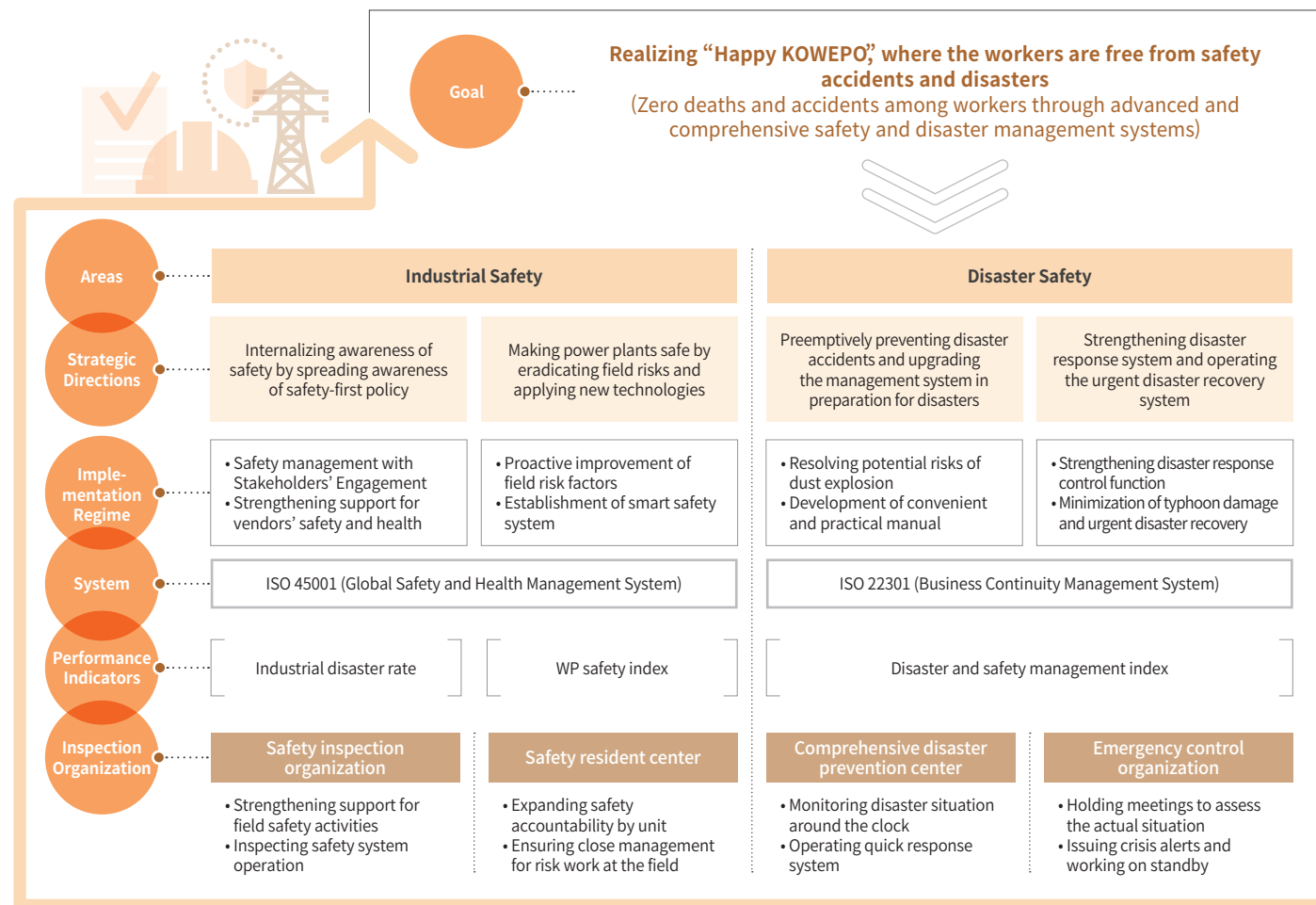


President & CEO of KOWEPO Co., Ltd.
Kim Byung-sook

Key Issues Safety Management

Safety Management Implementation System

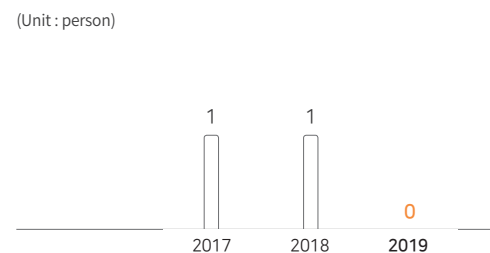
Based on the core values of prioritizing the life and safety of workers, KOWEPO has established a safety and disaster management implementation system, and strived to actualize "Happy KOWEPO," where the workers are free from safety accidents and disasters.



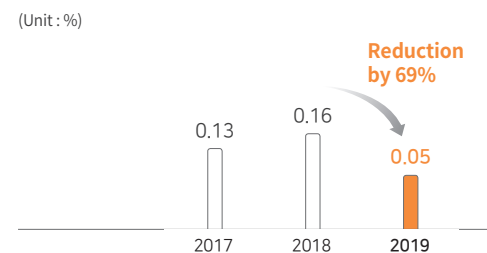
Safety Management Performance

By practicing human-centered enterprise-wide safety-first management, KOWEPO achieved the 'Zero death in 2019' and 'Industrial accident rate reduction of 69%' in 2019 compared to 2018. In addition, KOWEPO has achieved zero accidents and zero disaster by strengthening support for small resident vendors and daily workers who are vulnerable to safety accidents. The company plans to break the framework of existing safety management, and internalize a more advanced safety system and culture into the DNA of KOWEPO through efforts of benchmarking advanced countries and advanced companies in order to maximize the creation of social value of safety.

Achieving Zero Deaths in 2019



Industrial Accident Rate in 2019



Key Issues Industrial Safety

GRI 403-1, 403-2, 403-3, 403-6, 403-7, 414-2

Internalization of Safety Awareness by Spreading Safety-first Policy

Safety Management with Stakeholders' Engagement

KOWEPO has established a [WP All Together] safety management system that reflects various perspectives of stakeholders and actively implemented them in order to identify and improve field risks from various perspectives by providing stakeholders opportunities to engage in safety management.

Stakeholders	Activities	Detailed Implementation
Labor Union	Labor-Management Joint Declaration Labor-Management Joint Safety Inspection	<ul style="list-style-type: none"> Declaration of win-win labor-management relations, such as the operation of a committee for the realization of respect for labor union (July 2019) Listening to employees' opinions and conducting joint field inspections through operation of the Labor-Management Safety Council (Every month)
Employees	Safety Communication Meeting Guaranteeing employees' participation rights	<ul style="list-style-type: none"> Collection of opinions from the field through meetings with workers in the respective positions of vendors (Manager of business division, head of safety department and employees, etc.) Contest and award workers for safety innovation ideas (167 cases including ideas on field improvement) and spreading the best ideas
Citizen/ External experts	Active listening to public opinion Enhancing expert collaboration	<ul style="list-style-type: none"> Public contest for safety R&D project (selected and developed three outstanding projects out of 144 cases) Taking accident prevention measures such as Taeon accident prevention measures through advisory organizations by sector (industry, disaster, chemical safety, etc.)

Reinforcement of Safety Management Work System

KOWEPO has established a safety-first based work system by strengthening the safety organization at the head office and work sites. The company has reorganized the offices (Engineering Division → Engineering Safety Division), and newly established the Prevention and Safety Division which takes responsibility for all safety related work. In addition, the company increased the field safety team manpower from 16 to 28 persons and divided the risk management team into four teams from one which is under direct control to realize field centered safety management.

Reinforcement of Safety and Health Support System for Vendors

The safety and health support system for vendors was strengthened to create a safe working environment for employees of vendors. For workers vulnerable to safety risk in power plants, KOWEPO developed [Hidden Risk Saver], an online safety education content on PC and mobile phones, to promote education and confidence of safety for the first time among public corporations. Moreover, KOWEPO operated a safety shelter, an exclusive rest lounge, and other convenience facilities such as shower and sleeping rooms for the health of workers. In addition, the company operated the [Talk Talk] psychological counseling program in collaboration with the specialized organization to contribute to reducing employees' stress. Furthermore, the joint risk assessment for vendors was systematized to reduce the accident rate to the lowest level among power-generation companies and produced 0.05% of accident rate through the promotion of risk awareness and safety measures before starting work.



Hidden Risk Saver



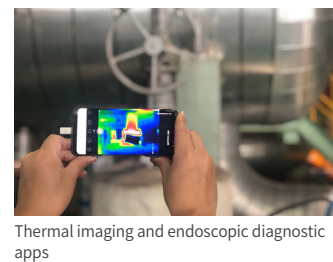
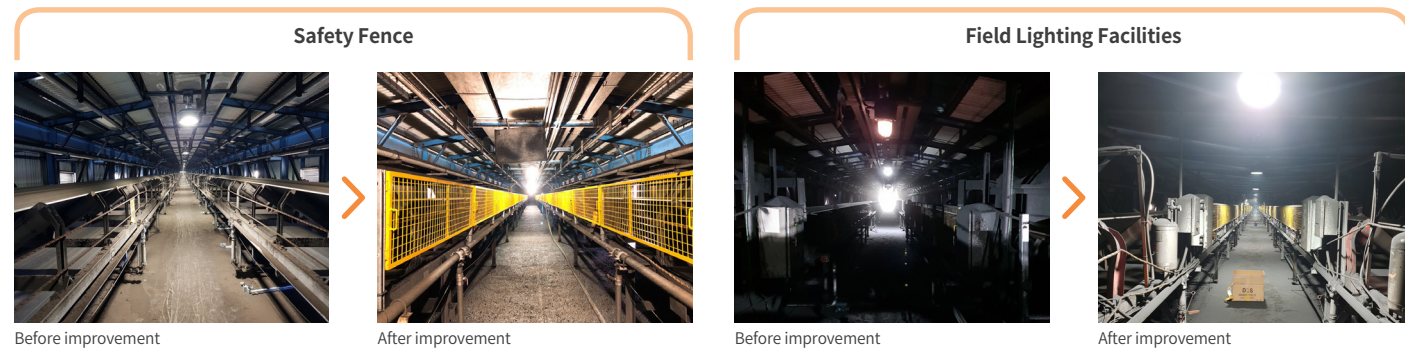
Talk Talk

Key Issues
Industrial Safety

Realization of a Safe Power Plant by Eradicating Field Risks and Applying New Technologies

Improvement of Field Risk Factors

KOWEPO is fully implementing improvement programs identified through external and internal inspections in order to eradicate field risk factors. In 2019, the company identified areas of vulnerability concerning its facilities and systems through an analysis of the current status of conveyor facilities, and comprehensively addressed these vulnerabilities. In terms of facilities, the company improved conveyor cleaning and safety facilities (fences, lighting, etc.) to minimize field risks. With respect to systems, KOWEPO hired more field workers and mandated that workers must work together in teams of two, so that they can monitor and support each other in inspection and maintenance work.

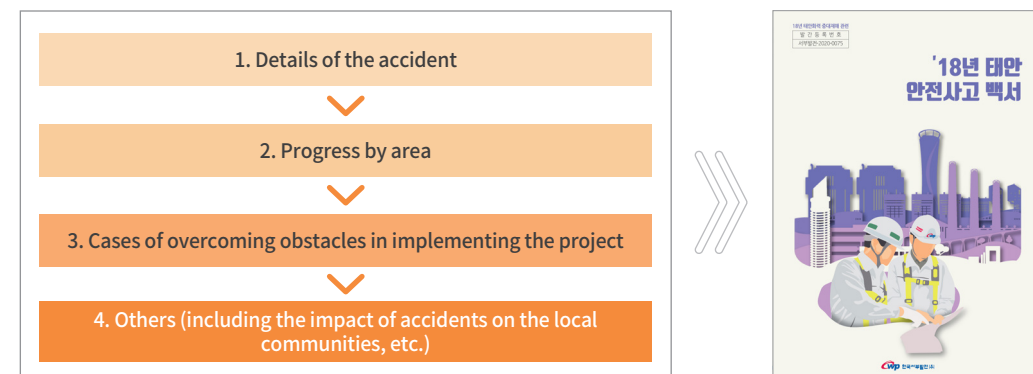


Establishment of a Smart Safety Management System

KOWEPO has established a smart safety management system to effectively protect field workers' lives and safety by utilizing the 4th industry technologies. In 2018, the company developed a smart mobile inspection device equipped with a thermal imaging and endoscopic diagnostic application through the establishment of a wireless communication network (LTE), and used it to inspect high-temperature and narrow-area parts in power plants. Unmanned drones are used to inspect the high locations such as chimneys and wind power generators while an underwater inspection robot is used to inspect the seawater intake. KOWEPO plans to develop a portable monitoring package (SMP) that can preemptively detect danger in closed spaces and CCTV blind spots in power plants, and an AI CCTV video analysis system that can analyze workers' abnormal behavior patterns and detect safety risks immediately.

Publishing Taeon Safety Accident White Paper

KOWEPO has published the [Taeon Safety Accident White Paper] that clearly showed the safety measures that all employees had implemented for each area since December 2018 when the unexpected serious disaster occurred, in order to actively reflect the government's safety-first policy and make power plants free from risks. The Taeon Safety Accident White Paper consists of details of the accident, progress by area, cases of overcoming obstacles in implementing the project, etc. (including the impact of accidents on local communities, etc.), and it records all relevant activities in detail and transparently discloses all activities to maintain objectivity.



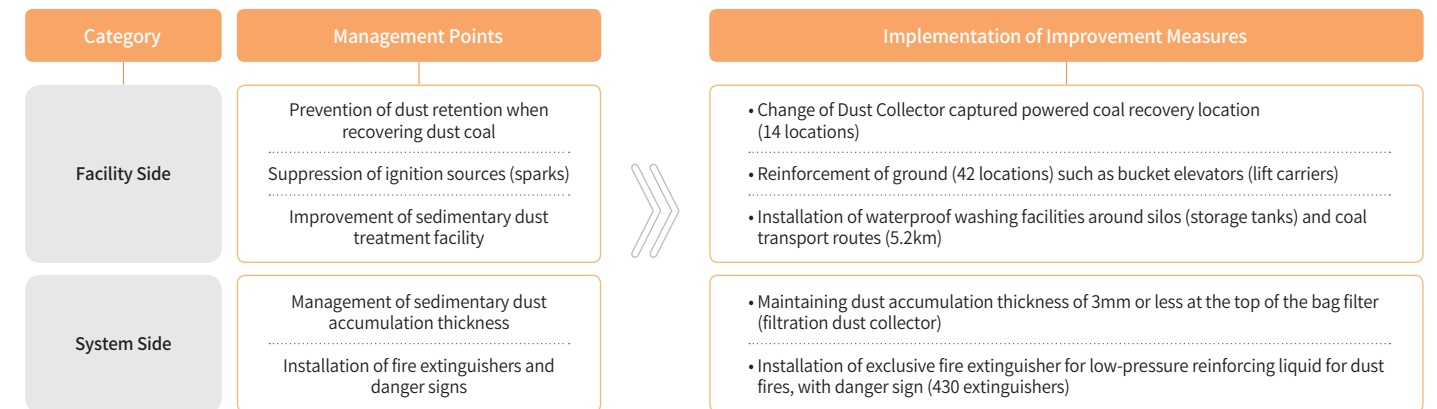
Key Issues
Disaster Safety

GRI 403-2, 403-5, 403-7

Preemptive Prevention of Disasters and Advancement of Management System In preparation for Actual Disaster Accident

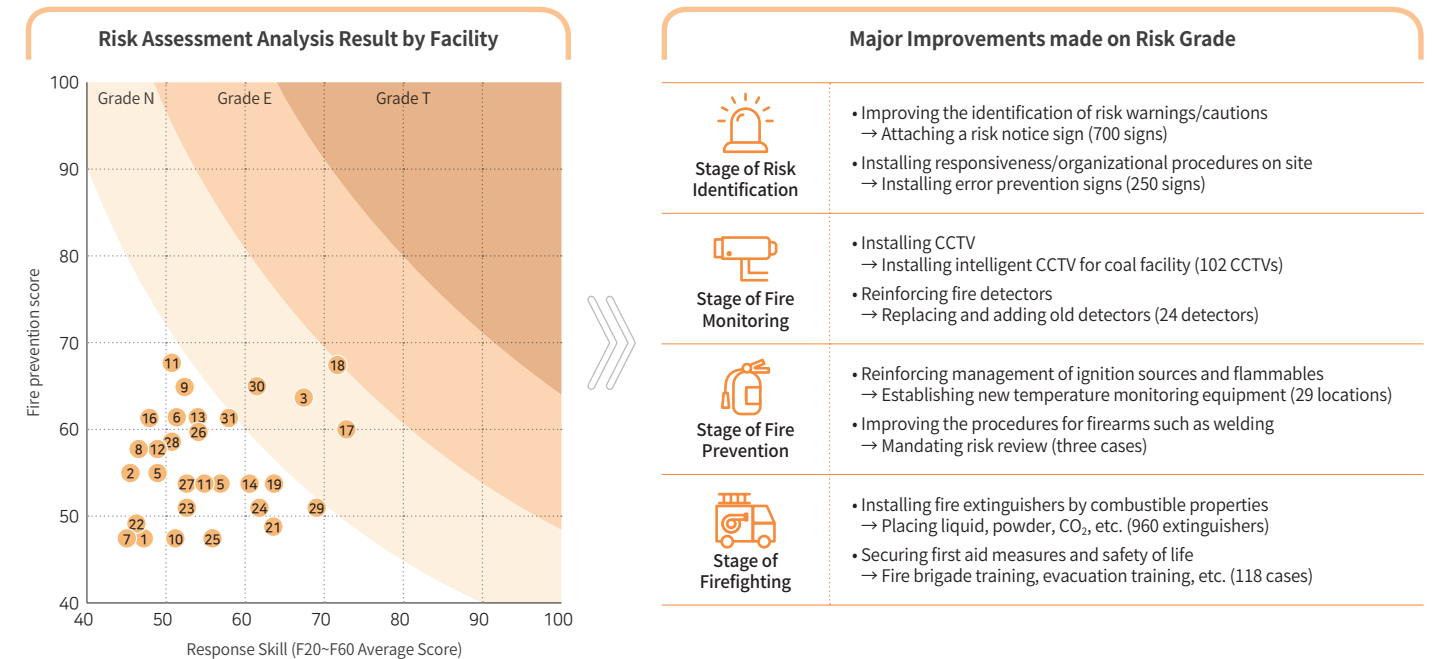
Identification and Elimination of Potential Risk of Dust Explosion in Power Plants

KOWEPO has reduced the accident risks by identifying and resolving fundamental causes of potential risks that cause dust explosions in coal and wood pellet-fired power plants and has improved facilities and systems to secure human safety. By identifying operational status and accident cases of other companies, and analyzing risk factors, KOWEPO identified major management points with high risk of accidents, developed and implemented 486 improvement measures related to such risks, and established a system to fundamentally prevent dust explosion accidents.



Improvement of Fire Vulnerable Facility

KOWEPO recognizes the need for fire risk analysis and countermeasures for hazardous areas of high-risk coal-fired power plants in order to proactively prevent fire accidents. In this regard, the company selected 31 areas in Taeon Thermal Power Plant with high probability of fire as hazardous areas, and conducted quantitative risk assessment to calculate evaluation scores by measuring the level of fire prevention and response capabilities. The areas are classified into N (Normal, satisfying minimum legal standard), E (Excellent, relatively good), and T (Top, very good) according to the evaluation score. Customized improvement and management measures were established and implemented to eliminate fire risk factors. By doing so, the company has achieved 'Zero' fire accidents.

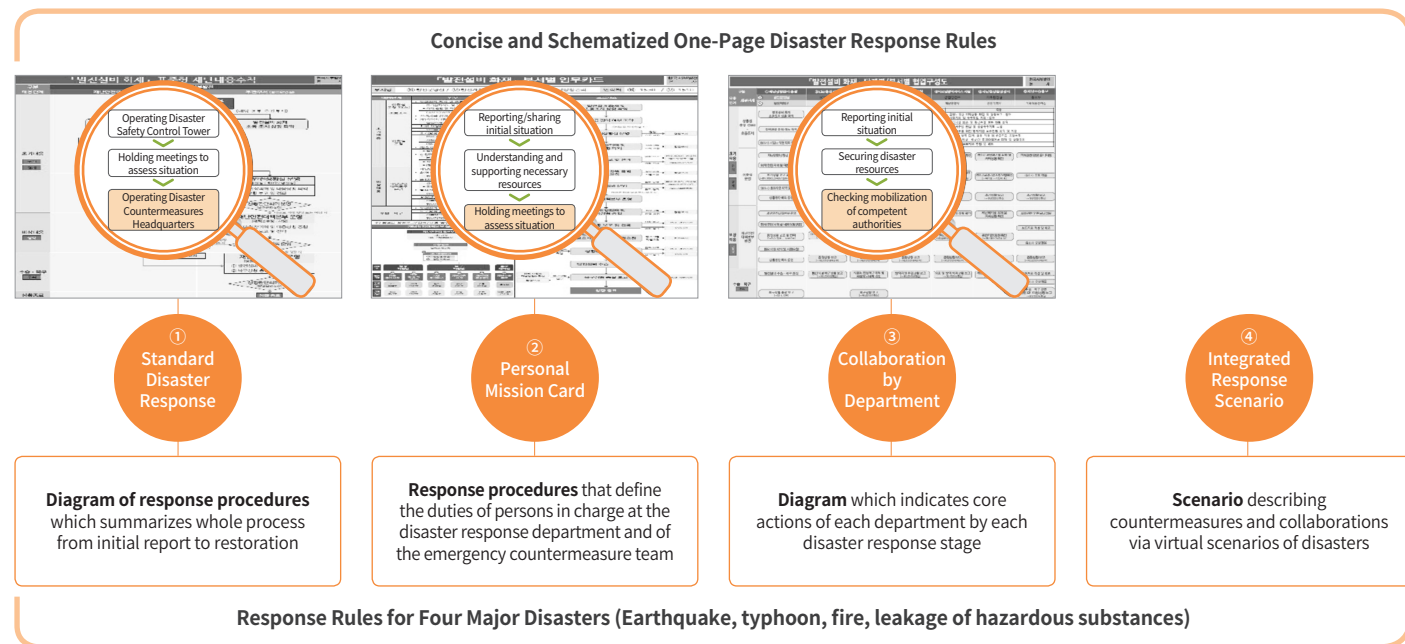


Key Issues

Disaster Safety

Development of Manual, Disaster Response Rules Summed up in One-page

KOWEPO developed the [One-page Disaster Response Rules], which summarizes 500 pages or more of manuals that can be easily understood and followed by field workers in power plants in order to secure the actual response capability for disaster accidents. As a result, the field workers in power plants can easily understand and implement the rules, making it possible to intuitively understand and practice disaster response. In addition, it has been distributed among the Ministry of Land, Infrastructure and Transport, Ulsan Metropolitan City, and public corporations including other power-generation companies as an exemplary case.



Strengthening Disaster Safety Job Training and Response Training

KOWEPO has strengthened disaster safety education and training in order to thoroughly prepare for safety accidents. Disaster safety managers and persons in charge have completed 100% of the statutory training courses, and have operated the internal job training, such as overseas training for advanced disaster safety companies and workshops, to enhance the safety competency of employees. In addition, the company has continuously maximized the training effect by developing and utilizing unique contents with AR technology, in order to improve the quality and effectiveness of disaster response training. Recognized as an active effort by KOWEPO to protect safety, the Ministry of the Interior and Security gave the highest grade (A) in the 'Disaster Response Safe Korea Exercise' to KOWEPO for two-consecutive years from 2018 to 2019, and the company achieved the highest grade (A) in the 'National Infrastructure System Disaster Management Evaluation' in 2019.

Disaster Response Safe Korea Exercise



National Infrastructure System Disaster Management Evaluation



Safe Korea Exercise 1



Safe Korea Exercise 2

Strengthening Disaster Response System and Operating the Emergency Recovery System

Strengthening Disaster Response Control Function

KOWEPO has advanced the function of the Disaster and Emergency Operations Center by utilizing 4th industrial technologies in order to secure the continuity of power supply by strengthening the disaster response system. Introduction of deep learning technology has improved risk prediction through automatic alarm of risk situations rather than simple monitoring. To collect the information, the company conducts customized analysis using big data to effectively derive risk factors for each power plant to quickly detect risks and deliver immediate response.



Emergency Recovery System

KOWEPO establishes a cooperative system with relevant authorities and operates an emergency recovery system to ensure stable operation of facilities in preparation for a weak power supply and demand. KOWEPO uses compatible spare parts that each power company possesses by establishing a spare parts management system through a cooperative system with the relevant authorities, and secures frequently failing parts jointly with power companies. In addition, the company operates the power supply and demand situation room in the winter and summer in order to actively respond to fluctuations in power supply and demand, develops emergency recovery manuals for each failure type, and conducts regular training in the first and second half in accordance with the manuals. The company could minimize the damage by Typhoon Lingling through the systematic field response in September 2019, maintaining normal operation of all power-generation facilities.



Kim Byung Sook
President & CEO of KOWEPO Co., Ltd.

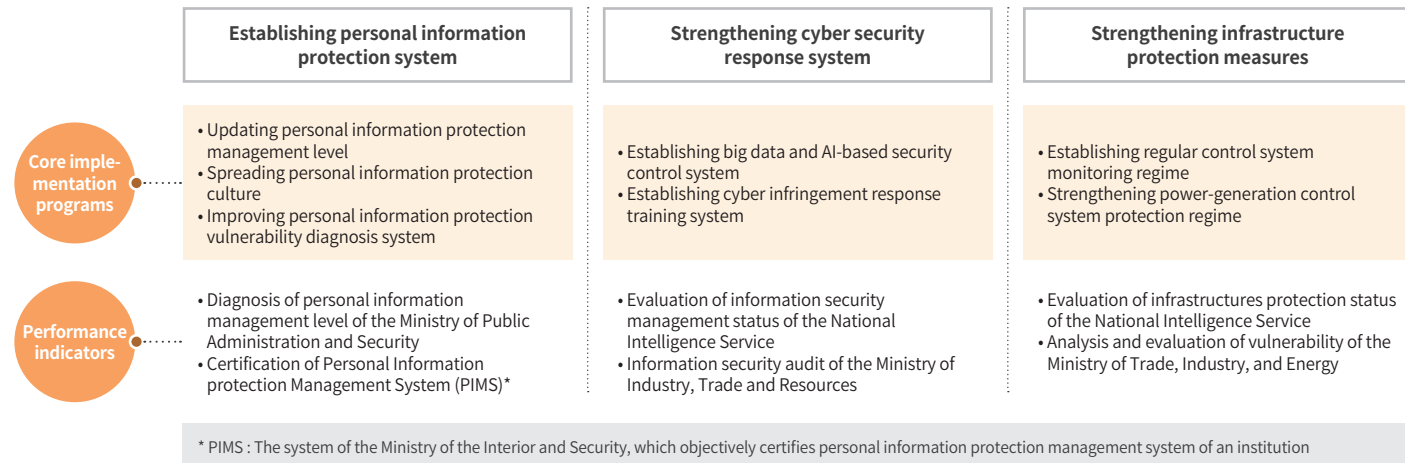
「KOWEPO's respect for labor and life-first safety management never ceases」

- After the accident in 2018, all the employees doubled their efforts to eradicate accidental deaths at all work sites, and achieved much improvement. However, there is still room for improvement in satisfying public expectations.
- In 2020, I will also make utmost efforts to improve the framework of the existing safety management and create a more advanced safety system and culture through heightened efforts such as benchmarking of advanced countries and companies in safety.

Cyber Security

Implementation system

Through internal and external environmental analysis on cyber security, the company recognizes that the scope of cyber threats is expanding and the number of hacking attempts against cyber protection centers is continuously increasing due to the development of ICT. We are thus implementing a cyber security implementation system to achieve 'Zero' infringement accidents. As such, KOWEPO has strengthened its cyber security response capabilities.



Establishment of Personal Information Protection System

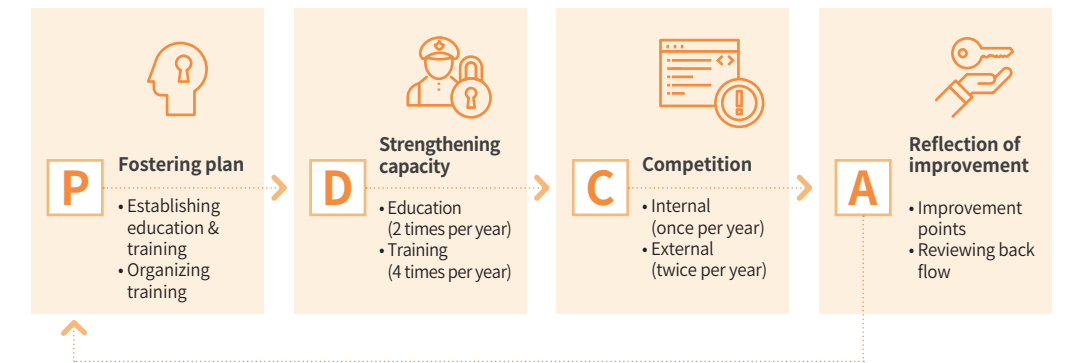
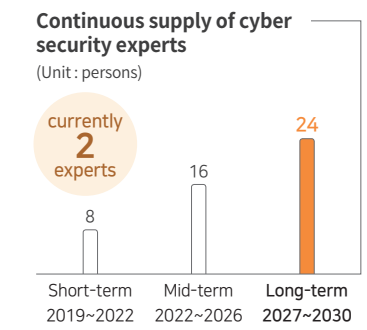
KOWEPO continues to implement improvement measures through self-diagnosis of personal information protection management level. As of 2019, the company has enacted personal information protection policies and guidelines (six types), implemented the collection and use of personal information (27 cases), as well as security check guidelines for trustees. Moreover, it has reflected the retention of personal information in the internal evaluation to advance the personal information protection management level by classifying the subjects into policy, collection and use, provision and destruction. In addition, the company established a personal information help desk (Q&A) in order to spread the culture of personal information protection, prepared and distributed the WP-Personal Information Consulting Casebook, and achieved zero leakage of personal information by improving the personal information processing system and the vulnerability diagnosis system. As a result, the company has obtained the PIMS certification for six consecutive years, receiving the highest grade (A) of the Ministry of the Interior and Security's personal information evaluation for the fifth consecutive year, and 100 points (perfect scores) for its countermeasures.

Strengthening Cyber Security Response System

Establishment of Big Data-based Security Control System
 KOWEPO developed an AI integrated platform based on big data to innovatively improve the efficiency of responses against infringement. Under the existing method, information was collected and stored separately for each security device (35 units). However, all information was unified into an integrated platform this time, and automated analysis of collected logs (threshold, machine learning) and visualization of analyzed information (charts, maps) which display any infringements automatically enabled the immediate detection of infringement accidents. The integrated platform drastically shortened the response time from 30 minutes to less than one minute, contributing to improvement of responses to cyberattacks.

Fostering Cyber Security Experts

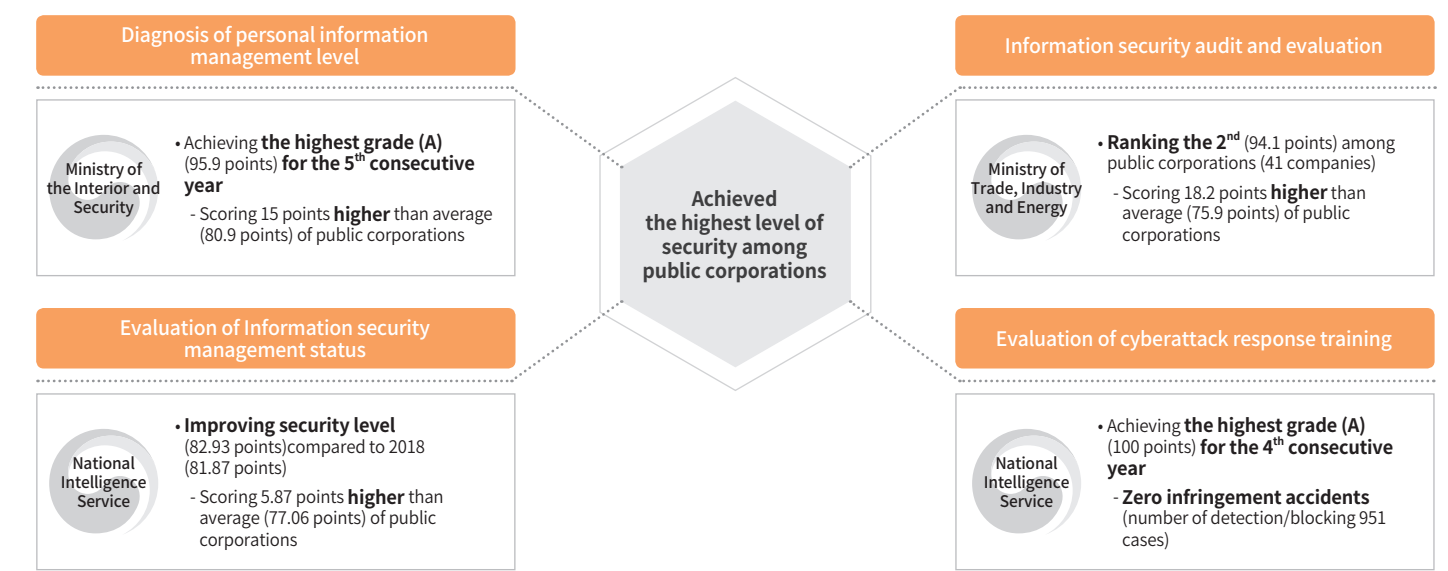
Intelligent cyberattacks have increased the importance of strengthening the professional competency of security personnel to achieve a rapid response to infringement. Accordingly, KOWEPO is developing a cyber hacking training system that simulates real-life cyber infringements based on virtualization for the first time among the power-generation companies. KOWEPO operated a P-D-C-A-based capacity building training system to continuously foster cyber security experts. In addition, KOWEPO strives to raise the security level of employees across the enterprise by holding a participatory competition to develop cyber security contents for employees.



Strengthening Infrastructure Protection Measures

KOWEPO has strengthened its infrastructure protection measures to thoroughly protect the power-generation control system. Through the establishment of a real-time control system monitoring regime, the company can detect and analyze abnormal data, and secure a safe control system by applying an agentless-based network detection and analysis technique. In addition, KOWEPO has acquired EMP threatening empirical data for the first time among power-generation companies by taking the initiative in implementing EMP vulnerability analysis and evaluation, and created performances that are used as data to improve the government's EMP vulnerability guidelines.

Major Achievements in Cyber Security



ISSUES
04



Social Responsibility

The Importance of Social Responsibility Issues

As a member of society, the social demand for businesses is increasing at home and abroad. The United Nations has set sustainable development goals, presenting the direction of social responsibility that businesses should fulfill. The Korean government has also designated the actualization of social values of public institutions as a key policy, urging public institutions to join the effort to achieve these common goals. As a company that leads the energy industry, KOWEPO is obliged to actively fulfill its social responsibilities and strive to not only create high-quality jobs, which is a key issue, but also to expand mutual growth and enable sustainable development of local communities.

KOWEPO's Responses

KOWEPO strives to create decent jobs by establishing a job-oriented management system based on government policies, stakeholders' needs, and CEO's management philosophy. In addition, KOWEPO creates a healthy power-generation industry ecosystem by faithfully implementing the mutual growth strategy system and enhances global competitiveness through localization of power-generation devices. In addition to the mutual growth of vendors, KOWEPO also actively contributes to the development of the local communities by promoting the local economy and conducting welfare infrastructure improvement activities.

Target Relating to UN SDGs



KOWEPO HIGHLIGHTS



Job Creation
(As of 2019)

661 jobs



Mutual Growth Performance
Evaluation
(Ministry of SMEs and Startups in 2019)

Good



Satisfaction-Level of Local
Communities
(As of 2019)

86 points

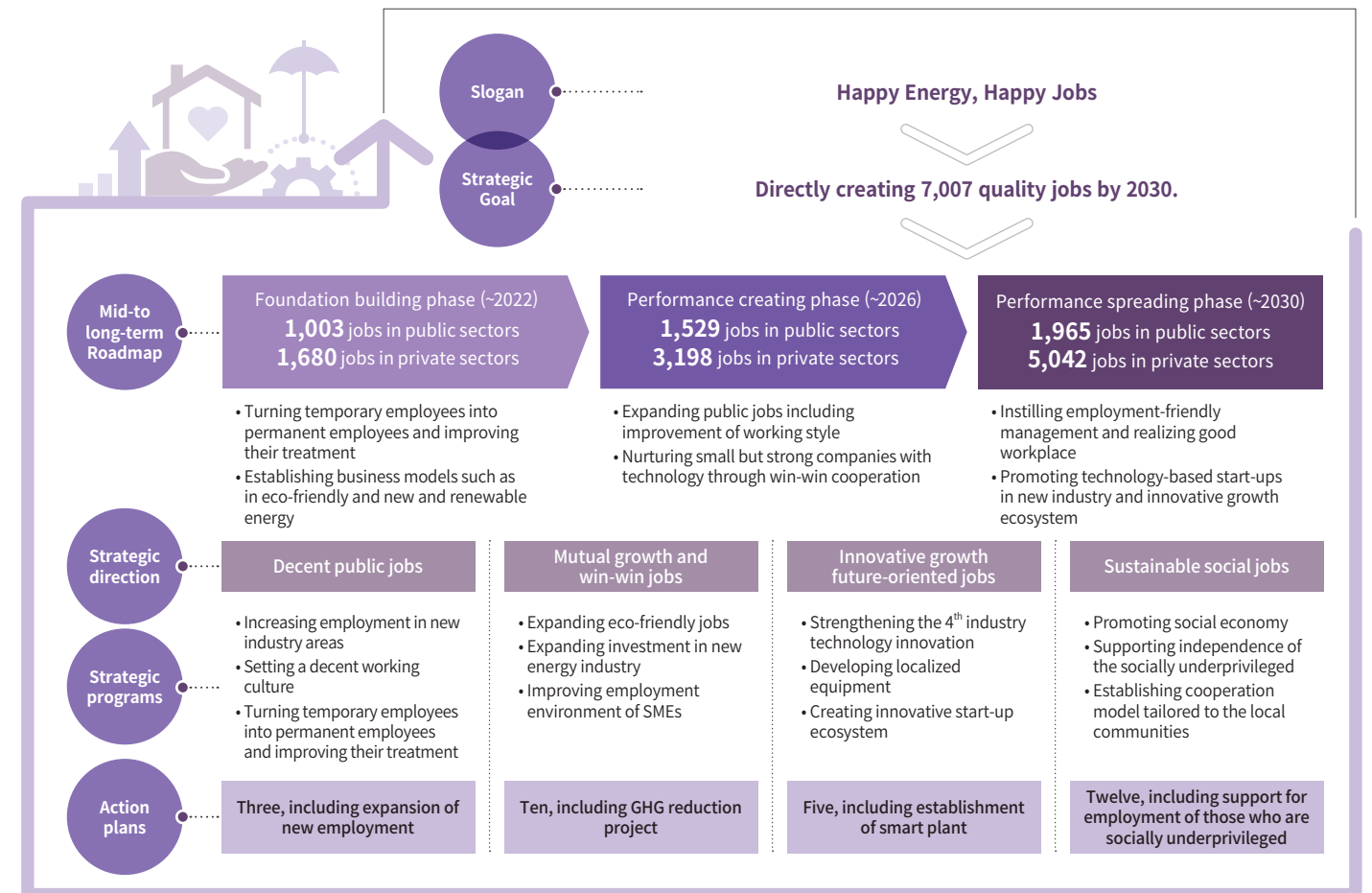
Key Issues

Job Creation

GRI 401-1, 405-1

Establishment of a Job-oriented Management System

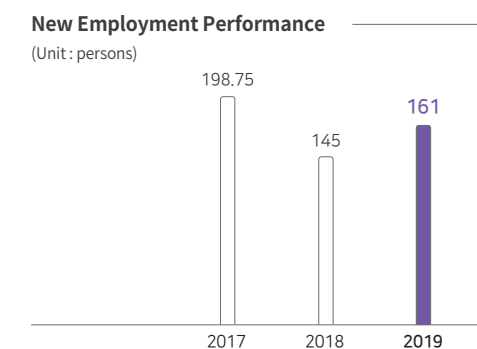
Under the slogan of [Happy Energy, Happy Jobs], KOWEPO has established a job-oriented management system composed of four strategic directions, 12 strategic programs, and 30 action plans to directly create 7,007 quality jobs by 2030.



Job Creation in Public Sectors

Expansion of New Employment

KOWEPO actively implements new recruitment in the public sector to contribute to the creation of jobs to achieve the government's social values.



2019 New Employee Joining Ceremony

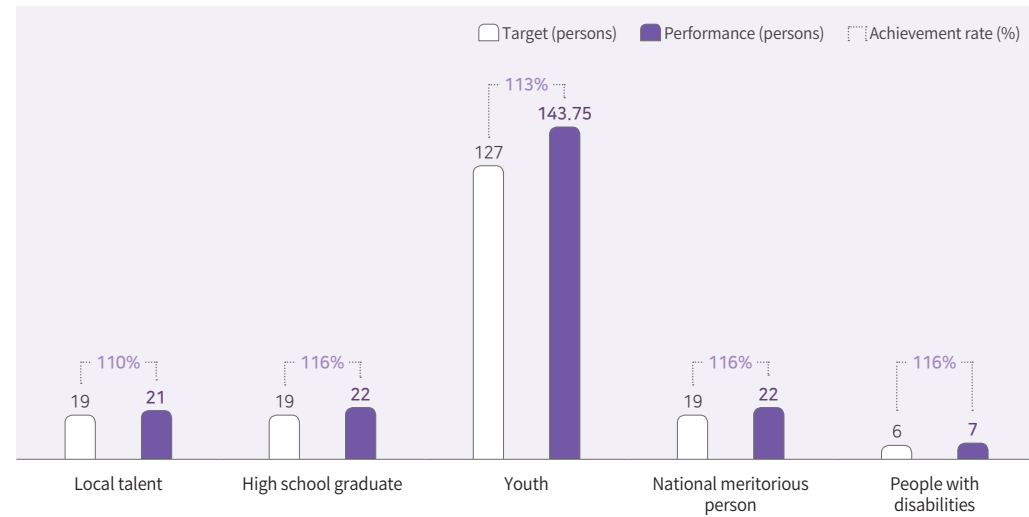
Key Issues
Job Creation

Turning Temporary Employees into Permanent Employees

KOWEPO turned temporary employees who do regular and continuous work into permanent employees, and secured procedural legitimacy through the operation of the consultative body of labor, management and experts. In 2019, to complete the conversion of all eligible temporary workers into permanent employees, we either made direct hires at KOWEPO or transferred them to our subsidiaries, in accordance with government guidelines.

Socially Equitable Recruitment

KOWEPO has expanded the recruitment of socially disadvantaged persons, such as local talents and high school graduates, and actively implemented the obligation to hire youth by establishing challenging goals and plans to achieve socially equitable recruitment. The company has overachieved the government's policy implementation targets regarding socially equitable recruitment through the efforts toward expanding the scope of additional points for securing local talent and hiring local residents in power plants, conducting separate recruitment for high school graduates to expand employment opportunities for high school graduates, and increasing the number of employment on occasional demands (safety personnel, employees in Gimpo combined cycle, etc.) for youth employment.



Job Creation in Private Sectors

Mutual Growth Win-Win Jobs

KOWEPO has created mutual growth win-win jobs by expanding the eco-friendly and new and renewable energy business and creating a safe working environment. The company has created 55 eco-friendly jobs by leading a low-carbon and eco-friendly management and technology development, and 49 new and renewable energy jobs by establishing and executing business models for each stakeholder related to new energy businesses. In addition, KOWEPO has created 136 jobs, including safety-first jobs, in order to improve the employment environment of vendors, leading to the creation of total of 240 mutual growth, win-win jobs.

Innovative Growth Future-oriented Jobs

KOWEPO is creating future-oriented jobs for innovative growth through localization of core technologies and supporting start-ups. KOWEPO has created 32 innovative jobs in big data, artificial intelligence, and 3D printing areas by establishing a [Safety First] smart plant in the 4th industry areas. KOWEPO also created eight jobs by implementing a regulation sandbox and fostering small but strong technology companies to localize power-generation equipment. In addition, the company has supported the commercialization of innovative ideas and in-house venture technology start-ups, and supported overseas entrance of private start-ups and venture companies to create 49 jobs in new business sectors, resulting in creation of a total of 89 future-oriented jobs for innovative growth as of 2019.

Number of mutual growth win-win jobs
(Unit : jobs)
240

Number of Innovative Growth Future-oriented Jobs
(Unit : jobs)
89

Number of Sustainable Social Jobs
(Unit : jobs)
117

Sustainable Social Jobs

KOWEPO is creating sustainable social jobs to realize people-centered community values. KOWEPO has nurtured social economic companies such as social ventures, created 24 regionally specialized jobs, and created 117 sustainable shared jobs by removing blind spots in employment through supporting people who are socially underprivileged. In recognition of the efforts to create social jobs, KOWEPO was awarded the Grand Prize in Korea's Employment Friendly Best Management Awards in the subject of jobs for vulnerable class, as well as the Minister of Health and Welfare Award for Excellent Enterprise Supporting Social Work of the Elderly in the category of creating jobs for the elderly.

Category	Details of Implementation and Achievements
Smart Farm	<ul style="list-style-type: none"> Establishing and operating a Korean-style smart farm using hot waste water of the power plant, and creating seven jobs
People with disabilities	<ul style="list-style-type: none"> Creating eight jobs, including training baristas with disabilities by opening the 'Nanum (share) Café' for those who are socially vulnerable and by expanding the coffee processing business Creating 19 jobs for persons with developmental disabilities through the development of social cooperative job model and providing sales support <ul style="list-style-type: none"> Established an eco-friendly car wash (in 2018), opened the second store (in 2019), organized and operated a management support group
Seniors	<ul style="list-style-type: none"> Creating jobs for 55 senior and middle-aged employees, including creating jobs suitable for the elderly through regionally specialized projects <ul style="list-style-type: none"> Cultivated supporters for greenhouse gas reduction in connection with the main jobs and supported activities of the sea protectors
Low-income class	<ul style="list-style-type: none"> Increasing income and creating 19 sustainable jobs through support for start-ups of low-income workers <ul style="list-style-type: none"> Supported the establishment of the old residential and electrical safety improvement center, and a self-sufficiency business group for home delivery in the new city

Comprehensive Results of KOWEPO's Job Creation Efforts

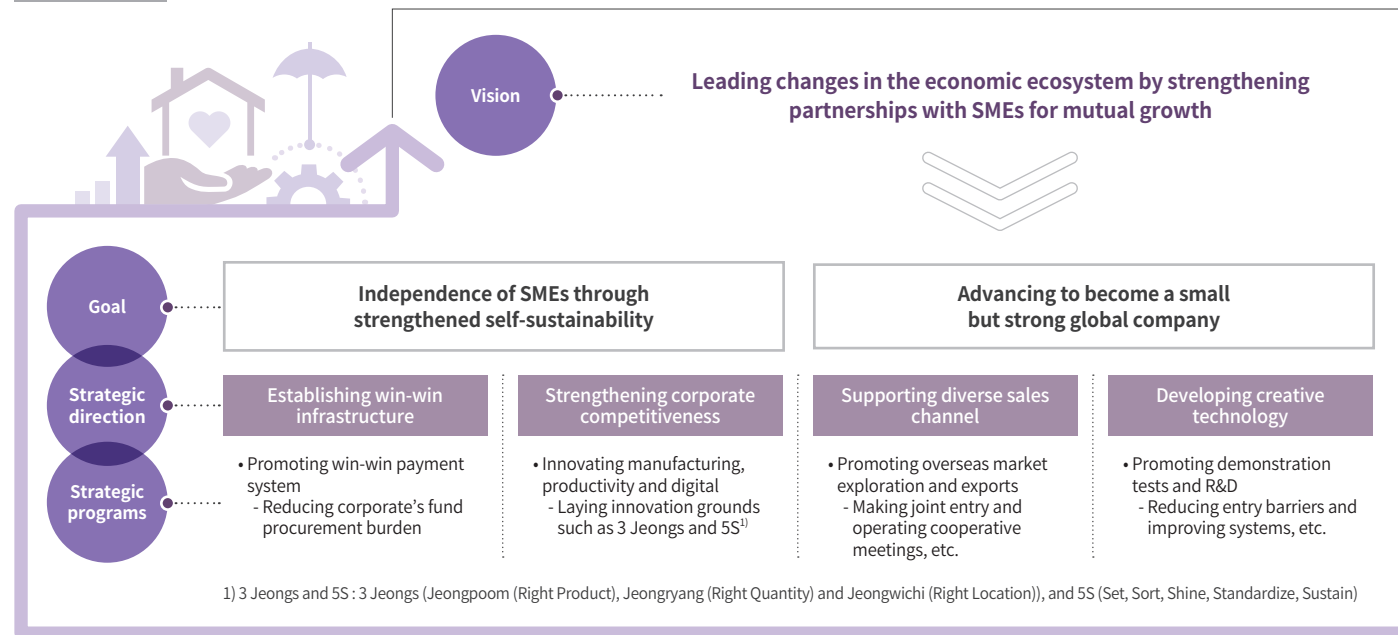
- Grand Prize in the Subject of Jobs for Vulnerable Classes
- Minister of Health and Welfare Award in the Subject of Jobs for Senior Citizens
- Grand Prize in the Subject of Employment-friendly sector
- Opened the 'Nanum (share) Café' as the standard workplace for people with disabilities
- Opened 'Car wash' to create jobs for people with disabilities
- Opened 'Shoe store and Food Trailer' for job creation in the communities

Expanding Mutual Growth

GRI 203-2, 414-2

Strategy System for Mutual Growth

KOWEPO has established a mutual growth strategy system to strengthen SMEs' independence and to support global market entry, thereby promoting the level of mutual growth and leading changes in the economic ecosystem.



Establishment of Fair Trade Order

Ranked the First among Public Corporations, and Achieved Win-win Payment Performance

KOWEPO has established a win-win payment system and is equipped with a system for prompt payments to subcontractors. In 2019, KOWEPO strengthened public relations by establishing an institutional support system linked to the cash flow and published the [Win-Win Payment System Guidebook] to advance the win-win payment system and spread and promote the win-win culture. Accumulative use of win-win payment system surpassed KRW 1.15 trillion (6,341 cases), achieving the highest performance among public corporations in terms of payment of 2nd tier vendors.

Improvement of Unfair Contract Terms and Conditions

KOWEPO has established a fair trade order by reasonably improving the terms and conditions of unfair contracts entered into with SMEs. In 2019, the company abolished conditions concerning liquidated damages imposed on trading partners, so that liquidated damages that had already been imposed could be cancelled if the trading partner completed construction within the contract period. The company also reduced the liquidated damage rate by 50%. KOWEPO expects that such efforts may lower the burden on vendors resulting from liquidated damage.

Transparent Selection of Evaluation Committee Members

The company has strengthened fairness and professionalism in the evaluation process by reflecting the matters concerning the composition and operation of the evaluation committee for proposals and evaluation of technical standards in bidding. This is to prevent the evaluator from judging based on personal and subjective standards in the bidding process. In addition, in the case of bidding which evaluates technologies by external committee members in consideration of business characteristics, the company uses the selection and appointment system of technical evaluation committee members of the Public Procurement Service.

Supporting SMEs

Support for Advancement into Overseas Markets

With the goal of fostering small but strong global companies with growth potential and innovation, KOWEPO implements customized overseas market entry support projects. For example, KOWEPO supported the start-ups in obtaining business AEO certification and in subscribing to overseas trade insurance so that they could establish safety nets. Moreover, the company provides a bridgehead for overseas advancement, creating a Test-Bed environment for local power plants using KOWEPO brand power, and a technology exchange meeting to develop infrastructure for specialized companies. In addition, KOWEPO operates export councils for information exchange and joint marketing and supports the establishment of corporations to effectively target the local market, providing specialized services such as R&D, education, and consulting for the globalization and localization of small but strong global companies.

Support for Strengthening Corporate Competitiveness

KOWEPO carries out the [Small and Medium-sized Business Innovation Growth Project] in order to strengthen competitiveness of small and medium-sized companies. KOWEPO comprehensively supports the innovation activities of SMEs. It does this by dividing into an industrial innovation movement that supports specialized consulting sectors such as management/manufacturing of the 2nd and 3rd tier companies and productivity improvement facilities, innovation partnership project that provides support for specialized consulting and facilities by sector of primary companies, and construction of smart factory that improves productivity by applying information and communication technology combined with digital automation solutions in the production process.

Support for Small-scale Solar Power Providers

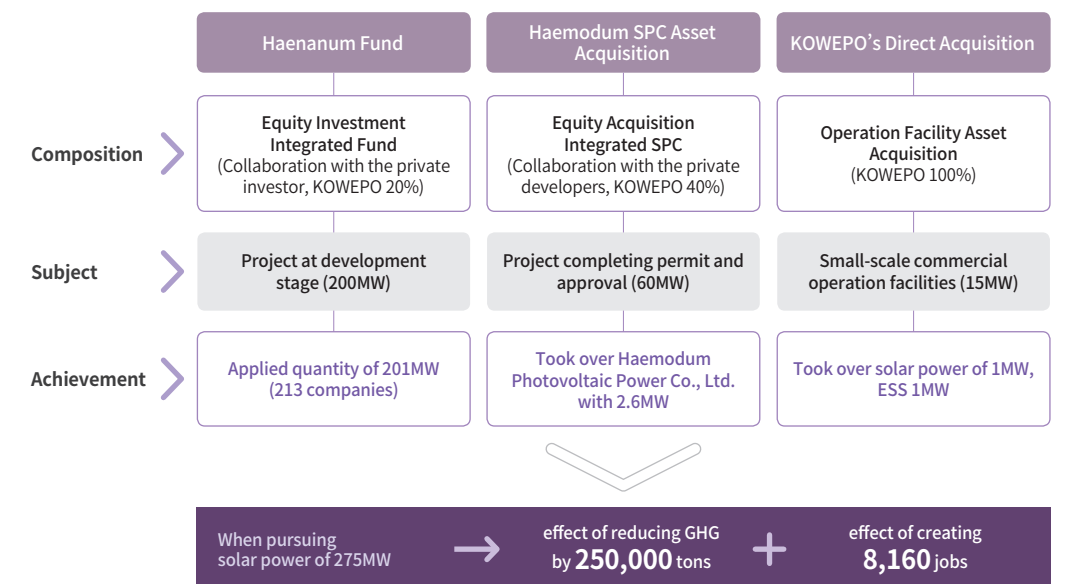
KOWEPO proactively developed a project to support small-scale solar power providers in order to solve the issue that small-scale solar power providers were giving up their business due to lack of experience, which was also causing incompleteness of constructions, resulting from unfair contracts conditions, among other reasons. For the first time in Korea, an integrated solution fund [Haenanum Fund] was established for small-scale solar power providers in which a number of leading Korean companies and law firms participated to provide integrated solutions for finance, insurance, EPC, etc. to resolve uncertainties faced by small-scale businesses. And [Haemodum Photovoltaic SPC] was established to support small-scale businesses through the acquisition of assets and investment in equity, and KOWEPO's direct asset acquisition.

Major Achievements

Industrial Innovation Movement
supporting **24** participating companies with total financial effect of **KRW 1.5 billion**

Innovation Partnership
supporting **10** participating companies with total financial effect of **KRW 800 million**

Construction of smart factory
supporting **15** participating companies and level confirmation (LVL 1) **issuance completed**



Expanding Mutual Growth

Supporting the Strengthening Capacity to Protect Technology

As the damage caused by leakage and stealing of technology by SMEs increases every year (scope of damage in technology leakage of 246 companies in the past 5 years amounts to KRW 540 billion), KOWEPO pursues integrated technology protection projects to maximize the effectiveness of technology protection projects for vendors that lack their own infrastructures to protect core technology and business confidentiality. Through the consultation/advice of experts (1st step), technical data deposit (2nd step), technology protection service (3rd step), and establishment of a leak prevention system (4th step), KOWEPO provides optimized security solutions tailored to each company and secures legal estimation power to prevent technical infringement. KOWEPO also supports SMEs' to build their capacity through establishing a clean office with zero malicious code and ransomware, and preventing internal and external technology leakage and infringement, etc.

Goal	Subject	Major Achievements in 2019	Remarks
Establishment of a foundation for survival and growth of SMEs by establishing a system for preventing core technology leakages	Professional consulting	• Security competency and field diagnosis results: Poor (average 35 points) - Conducted consultation with experts and in-depth advice on risk groups	18 companies
	Technology deposit	• Support for five cases including technical data, drawings, and trade secrets - Including pedestal bearing design and manufacturing technology, etc.	5 companies
	Technology protection	• Support for malware, ransomware detection service, etc.	1 company
	System construction	• Building a customized system to prevent technology leakage - UPS, data backup, document centralization, etc.	7 companies

Promotion of Field Demonstration Test of Excellent SMEs' Products in Power Plant

KOWEPO actively supports demonstration tests to provide SMEs with opportunities where field demonstration tests in power plant facilities requiring high reliability can lead to procurement. KOWEPO strives to verify excellent products through close one-on-one collaborations between the KOWEPO's relevant department and the selected company, expanding the number of supported companies and tasks beyond formal and customary methods. KOWEPO issues the company of which verification is completed a written confirmation of demonstration so that the companies can use it to market their products.

Providing Support to Bring 'Respected Labor and Good Working Environment' to Reality

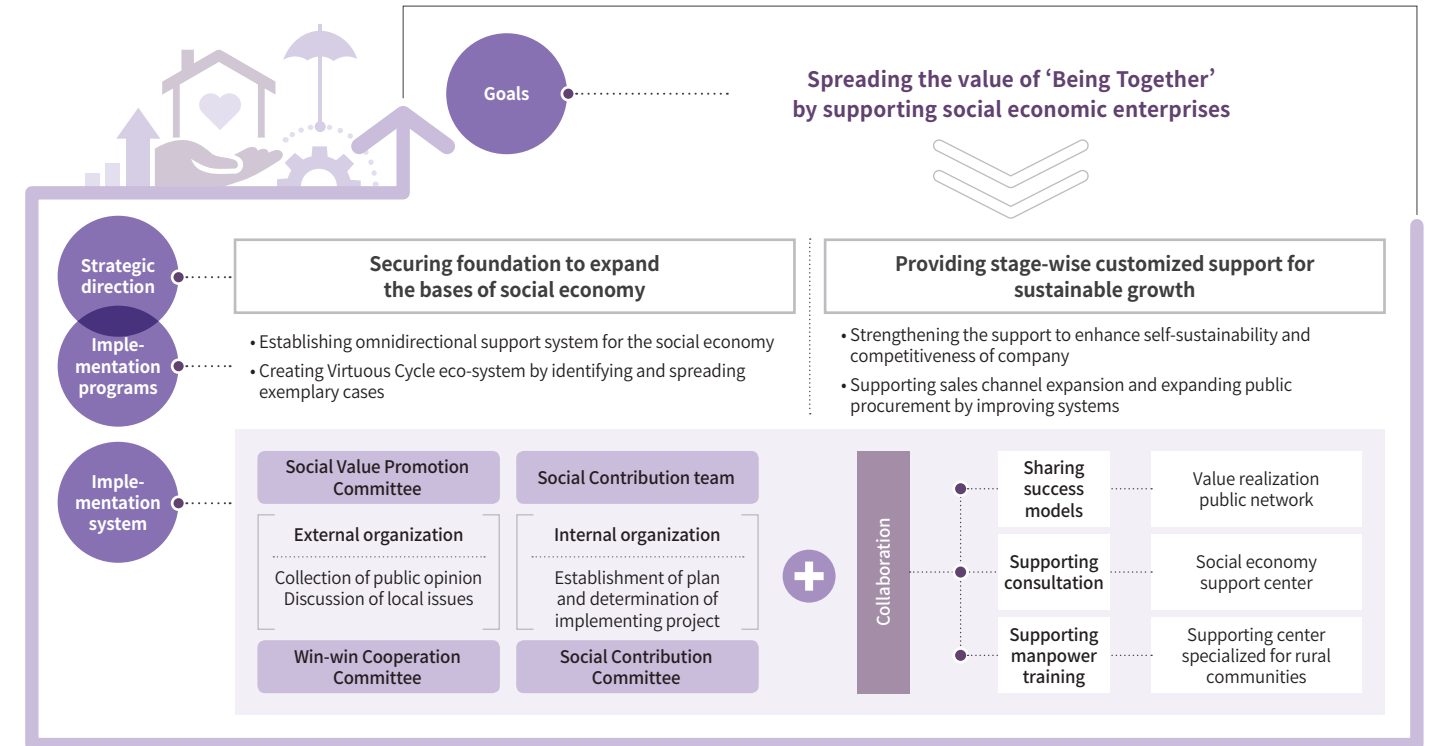
KOWEPO carries out four major work-family balance projects to make investment in persons lead to growth of the company as well as to build a consensus that 'people-centered' business operation and creating balance between work and family is necessary. KOWEPO continuously implements various projects to resolve shortages of manpower facing SMEs such as improving their office environment by creating a culture of freely using vacation with the worker vacation expenses, providing leadership camps for family members of SMEs employees that offers a venue for family unity, supporting smart desk to protect employees' rights and to improve their work environment, as well as by providing support for fostering professionals such as strengthening leadership and capabilities of female employees in the company.



Family Leadership Camp

Support Strategy for Social Economic Enterprises

KOWEPO established a support strategy for social economic enterprises. This was done through an environmental analysis to spread the value of 'Being Together' by supporting social economic enterprises. KOWEPO also established an omnidirectional support system for the social economy, and provided a customized support for sustainable growth of enterprises according to their growth stage.



Securing Foundation to Expand the Bases of the Social Economy

Supporting Three Major Areas for Start-ups and Growth

For the establishment and growth of social economy enterprises, we deliver considerable support focused on networks, financial assistance, and education. KOWEPO participates in the public network of value realization to share exemplary cases of social economy companies among public institutions, and carries out village restoration projects in cooperation with local governments and industry-academia cooperation groups. In addition, the company contributed KRW 14.3 billion of rural community fund between 2017 and 2019 to help overcome the economic crisis in the rural and rural areas. KOWEPO also provided KRW 750 million of management improvement funds to improve accessibility of financial support for small social enterprises. In the field of education, the company conducted customized training for people with disabilities in the fields of start-up academy such as establishing a village company, car wash and barista.

Identification of Exemplary Case for Creating a Virtuous Cycle of the Social Economy Ecosystem

KOWEPO identifies 'Social innovation change makers' to accelerate the growth of the social economy through an inflow of talent and capital from the private and public sectors, and through the spreading influence of exemplary cases. The company has identified the best practices of social economy activists in five areas devoted to community development (economy, culture, environment, welfare, and education) in order to provide pay incentives and overseas training opportunities. Furthermore, KOWEPO plans to support the establishment of networks and collaboration amongst award winners to identify new businesses. KOWEPO will actively spread and disseminate successful social economy models to actively expand the foundation of the social economy.

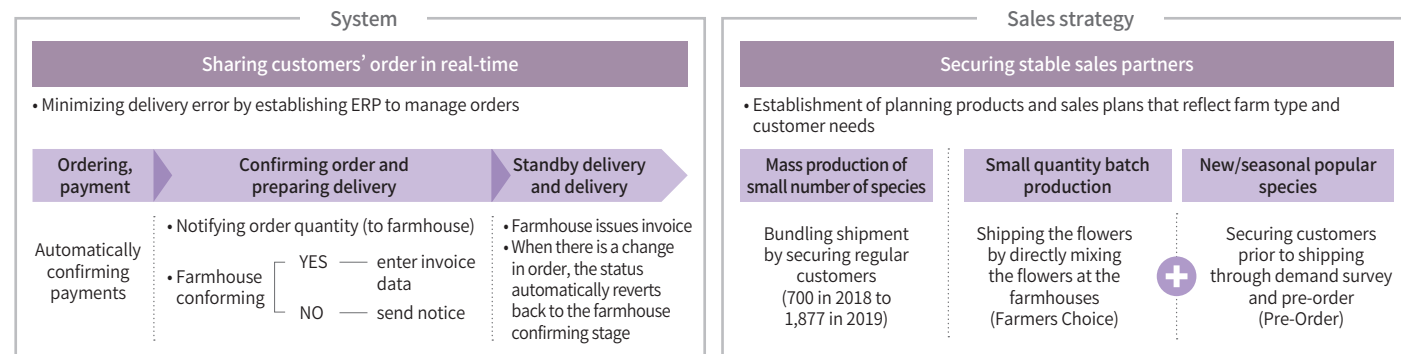
Expanding Mutual Growth

Provision of Stage-Wise Customized Support for Sustainable Growth

Strengthening Management Independence Support

[Step-up : Flower Farm] Building an Online Platform and Enhancing

The company established an online B2C direct trading platform [Farm to Table] in May 2018 in order to support local flower farmhouses. This was to overcome the economic crisis resulting from decrease in flower consumption. KOWEPO established product plans and sales plans that reflect farm types and customer needs to enhance the competitiveness of flower farmhouses, thus contributing to securing a stable dealership.



[Scale-up : Car wash shop employing people with disabilities] Enhancing Independence through Business

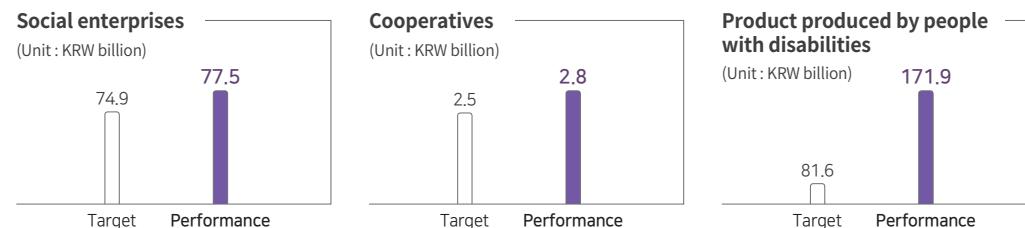
Diversification and Management System Improvement

KOWEPO opened the first eco-friendly car wash shop in September 2018 in collaboration with competent authorities, employing people with developmental disabilities and self-support workers in order to create jobs for socially underprivileged people. In 2019, the company formed an independent management support group with 12 employees, including senior employees in the company, to contribute to securing sustainability by supporting management improvement such as business management and advice at work sites, and suggesting new businesses by analyzing demand and commercial power around the car wash shops.

Category	Operation of Pilot Project (in 2018)	Securing Sustainability through Management Improvement Support (in 2019)
Expanding the field of business	<ul style="list-style-type: none"> Opened the first eco-friendly car wash shop - Employed people with developmental disabilities and self-support workers 	<ul style="list-style-type: none"> (Business Expansion) Opened the second car wash shop and operated a cafe in the car wash shop (New business) Established café 'Moi Lai' (home-made fish cakes + beverages)
Dedicated operation organization	<ul style="list-style-type: none"> Launched business through cooperation with related organizations and operated and managed businesses led by welfare institutions 	<ul style="list-style-type: none"> Established [Heemangnuri Social Cooperative] in cooperation with local governments, welfare organizations and related organizations such as the Parents' Association of people with disabilities and consigned the operation
Fostering professional human resources	<ul style="list-style-type: none"> Conducted trainings with self-support centers prior to the allocation to the field 	<ul style="list-style-type: none"> Provided customized curriculum support for people with disabilities in the car wash and barista sector Formed professional manpower pool through pre-selection of trainees and implementation of job training

Details of Procurement of Products from Social Economic Enterprises

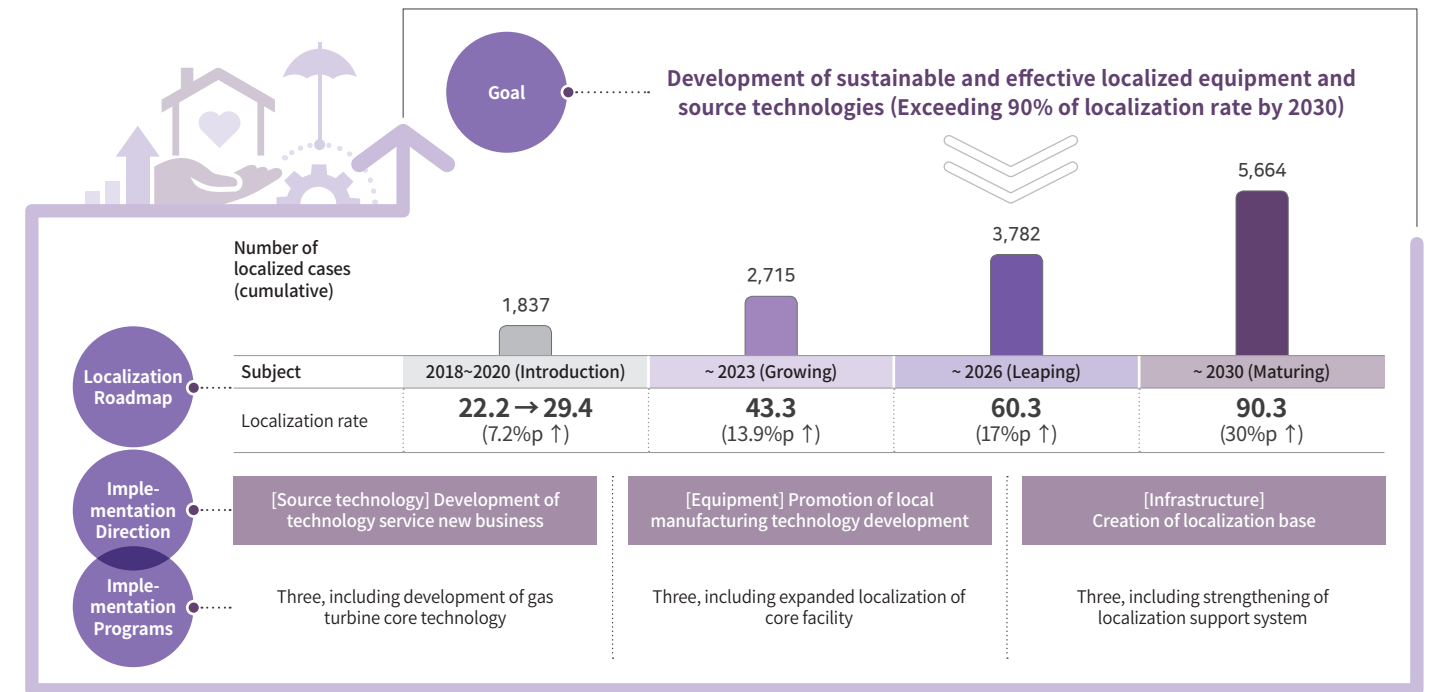
Achieving 100% rate of preferential purchase recommended by the government (As of 2019)



Localization of Power-generation Equipment

Mid-to long-term Localization Development Roadmap and Implementation Strategy

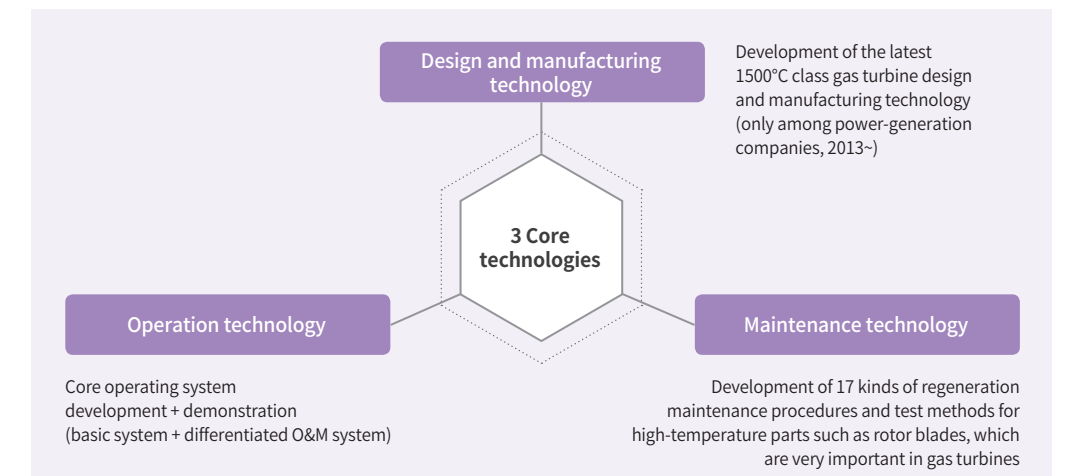
KOWEPO has established a localization roadmap and implementation strategy to lead the creation of an innovative and win-win cooperation ecosystem based on a cooperative development strategy that combines excellent manufacturing technology of SMEs with KOWEPO's power-generation operation technology and infrastructure. This is to solve the problem of dependence on overseas equipment of the power-generation industry and lead localized technology development.



Localization Implementation Status

Promoting Development of Three Core Technologies for Gas Turbine Manufacturing

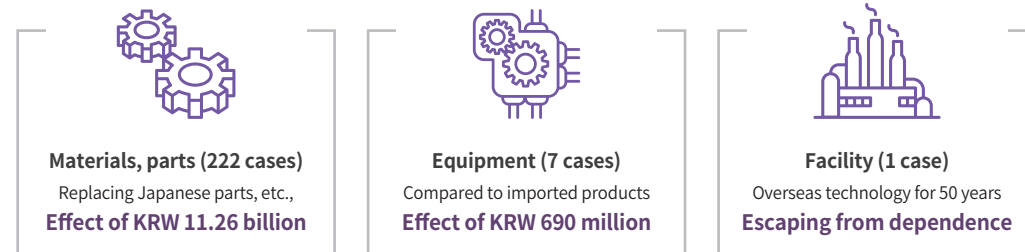
KOWEPO is developing [Three core technologies for gas turbines (design and manufacturing, operation, maintenance)] in order to break away from the technological dependence of gas turbines that depend on 100% overseas technologies, and to realize a solid position as a country that possesses a large-capacity gas turbine manufacturing technology for power generation.



Expanding Mutual Growth

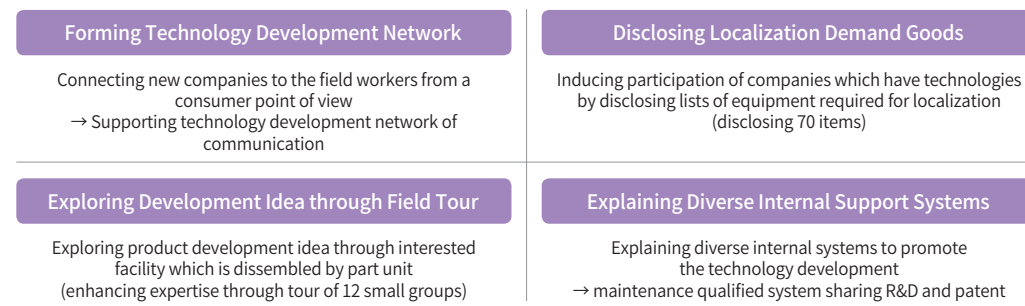
Localization by Power-generation Equipment Sectors

KOWEPO decisively invested (KRW 16.26 billion) to localize the [materials, parts, equipment, and facility] sectors that are essential for the power-generation industry, and applied 220 localized items at the field and replaced Japanese materials. In 2019 alone, the company generated performance of KRW 11.95 billion of localization, and the company continues to challenge itself to localize power-generation equipment by attempting to develop core equipments for coal storage, which was 100% dependent on overseas providers for decades.



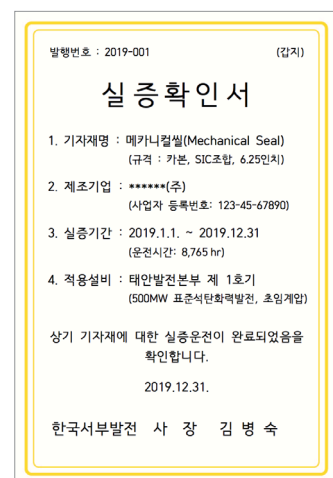
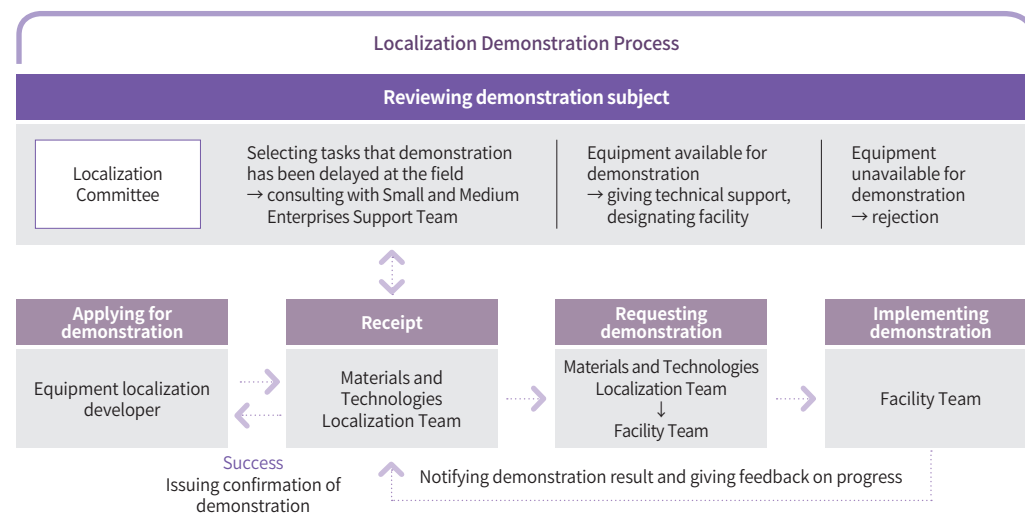
Creation of Technology Development Infrastructure for SMEs

KOWEPO has boldly lifted the high barrier to entry in the power-generation industry, which had previously been inflexible. Instead, KOWEPO provided a stepping stone for technology development opportunities for SMEs in order to realize a win-win development in technology. KOWEPO has established a localization support system to boost the development of technology in the domestic manufacturing industry, and supported new companies to develop technology development networks to enter the power-generation industry and explore technology development ideas. In addition, the company adds the value of win-win through fine-tuned and bold support measures, such as providing Test-Beds targeting actual power-generation facilities to existing companies.



Field Tour

KOWEPO Localization Test-Bed

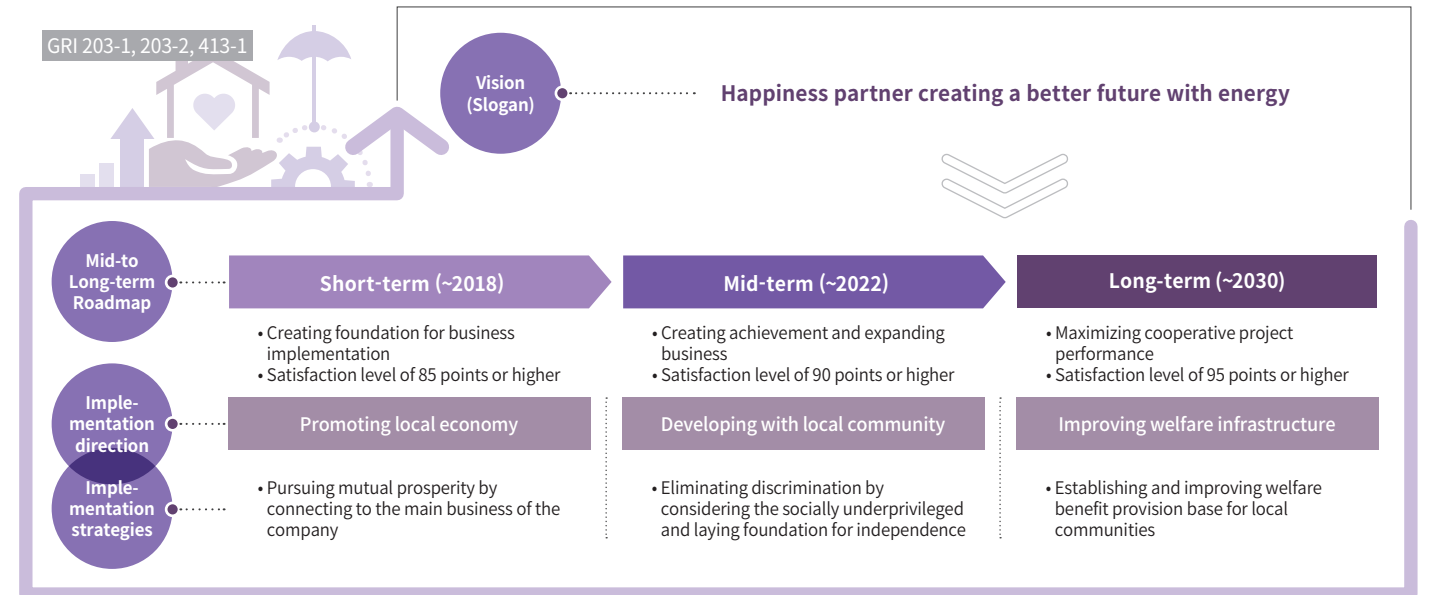


Confirmation of Demonstration

Key Issues

Win-win Cooperation with Local Communities

GRI 203-1, 203-2, 413-1



Social Contribution System

Social Contribution Vision and Strategy

KOWEPO is systematically implementing social contribution activities by establishing a social contribution vision and strategy in a way that is consistent with management strategies and social contribution issues.

KOWEPO's Volunteer Group

KOWEPO's Volunteer Group was founded in August 2004 to help each other, share their love, and create a brighter and healthier society. KOWEPO's Volunteer Group cares for every corner of society's marginalized areas through conducting various volunteer activities, and it will continue to faithfully fulfill its role as a corporate citizen through performing practical volunteer activities.



KOWEPO's Volunteer Group Emblem



Serving Rice Cake Soup to celebrate New Year in 2020



Volunteering to make Kimchi for the winter on behalf of those in need



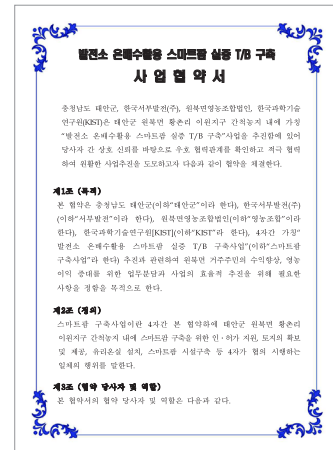
Social Innovation Change Maker Award Ceremony

Social Innovation Change Maker

KOWEPO holds the [Korea Social Innovation Change Maker] award ceremony in order to build a foundation for sustainable social innovation. It does this by actively playing the role of a company that fulfills its social responsibilities by introducing systems that reward and support people performing exemplary work for the country and society, and those who identify models of social value creation. The Social Innovation Change Maker award is given to those who have contributed to the public interest and community development through social innovation activities in the economic, cultural, environmental, welfare, and educational sectors. The awardee is given a bonus (KRW 10 million) and an overseas training opportunity. KOWEPO strives to enrich people's lives and to make them happy by identifying changemakers who work silently but surely to make our society better.

Key Issues

Win-win Cooperation with Local Communities

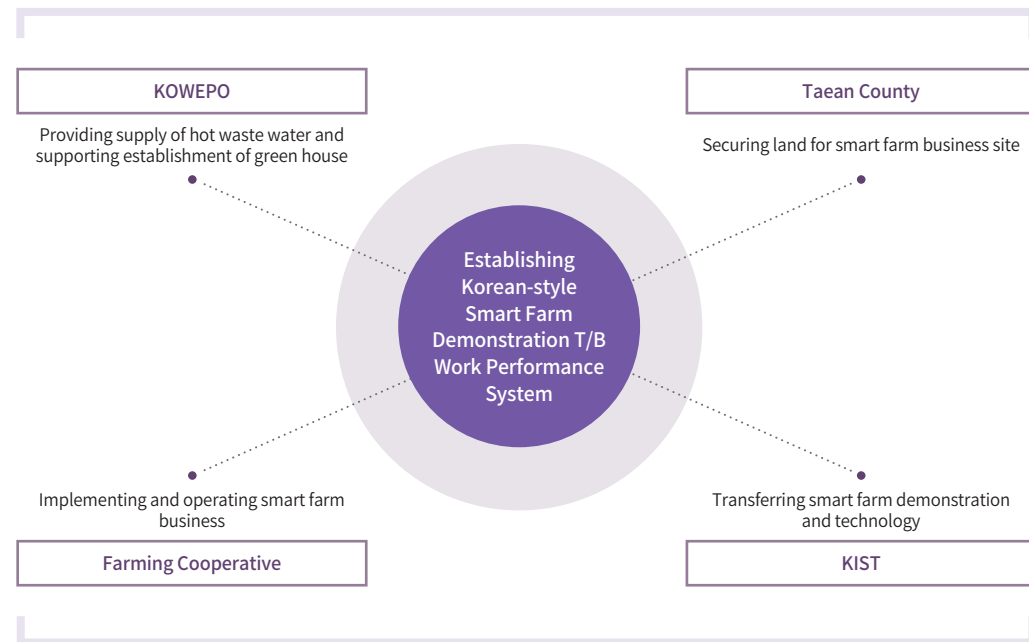


Business Agreement

Promotion of Local Economy

Establishment of Smart Farm Using Power Plant Hot Waste Water

KOWEPO plans to contribute to improving the income of local farmers by carrying out a smart farm business utilizing hot waste water. KOWEPO's smart farm business, a first among Korea's power-generation companies, is a Korean-style smart farm demonstration complex that utilizes hot waste water. The company has established a hot waste water utilization system and localized the core cultivation technology. As of 2019, the company produced 162 tons of smart farm demonstration crops (tomatoes), thereby achieving the 2019 demonstration objectives. This generated sales of KRW 190 million and created 5 new jobs. KOWEPO plans to expand the scale of business through the demonstrations of pilot crop cultivation technologies and expects to increase the income of farms by KRW 11.9 billion, creating 55 new jobs for the next five years.



Greenhouse Gas Reduction Project for Generation of Farmhouse Income

KOWEPO contributes to promoting the local economy by developing a greenhouse gas reduction project generating farmhouse income. The project started in Chungcheongnam-do has been expanded to farmhouses across the country, such as Gyeongsangnam-do and Jeju-do. As of 2019, 92 farmhouses are participating in the project generating income of KRW 2.43 billion per year. The company plans to spread the GHG reduction project model in agricultural sectors nationwide to contribute to increasing the income of more farmhouses.

WP Social Flowers

Reflecting the characteristics of the Taeon region, which accounts for 30% of the flower production in Chungcheongnam-do and has an image of the city of flowers, KOWEPO has carried out the [WP Social Flower] project since March 2018 to support the establishment of sales channels for flower farms. Since the start of the project, the company has built an online B2C direct trading platform [Farm to Table], set up a product and sales plan that reflects farm types and customer needs, and built an order management ERP system to share customer orders in real time. This has contributed to the increase of flower farms' income of KRW 360 million over the past two years. The company has also created a variety of social values by conducting horticultural therapy classes using flowers cultivated for the purpose of creating jobs for women whose careers have been interrupted, as well as for supporting the elderly by providing them emotional therapy.



WP Social Flower Field Management Activities

Major Achievement in 2019

92 | 24.3

Number of participating farmhouses (cumulative) | Income of farmhouses (KRW 100 million/year)



Held an Opening Ceremony for Job Creation Project for Cohabitation with Senior Persons



Supporting Start-up Lab for at-risk Youth

Win-win Development with Local Communities

Offering Social Jobs to Senior Citizens

KOWEPO implements customized job projects for senior citizens to contribute to improving the quality of life for the elderly. Starting with a pilot project for senior citizens living alone in 2016, the company developed a [Job Creation Project for Cohabitation with Senior Persons] such as creating jobs for a guardian of the sea environment and a cultural heritage management center, and offered a total of 550 jobs to the elderly in the local communities. Customized job creation projects for the senior citizens have the effect of generating income and emotional stability for the elderly. Therefore, the company plans to continuously identify project and implement them.

- Awarded grand Prize in [Korea's Employment Friendly Best Management Awards] in the subject of providing jobs for vulnerable class in 2019
- Awarded the Award of the Minister of Health and Welfare Award for Excellent Enterprise Supporting Social Work of the Elderly during [2019 Week of Creating Jobs for the Elderly]

Supporting Independence Capability for at-risk Youth in Blind Spots in Welfare

Even though a mature culture of giving donations and volunteering is spreading, there are still welfare blind spots. The ratio of juvenile offenders to total offenders has declined over the past decade, but the proportion of violent offenses is on the rise. In addition, support for at-risk youth compared to various support for low-income class youth is still insufficient. Therefore, KOWEPO has implemented a 'Pathmaker project' to make space for at-risk youth to receive opportunities in experimenting with entrepreneurship, as well as training to achieve social and economic independence. Dream-Up project provides customized support, such as support needed for daily life, special support and support for growth of at-risk youth. The company will continue to support safe and healthy growth by establishing its own social contribution brand, in response to the lack of support for available for at-risk youth.

Building a Business Model that Supports Independence of People with Disabilities

KOWEPO has built a business model that supports people with disabilities to grow independent to ensure incomes for the underprivileged. KOWEPO opened an eco-friendly car wash shop that was selected as a suitable project for people with disabilities after gathering opinions from the local residents. Soon later, KOWEPO established the [Heemangnuri Social Cooperative], which consists of parents of people with disabilities, etc., and opened a second shop. In addition, the company opened the [Nanum Café], the only standard workplace for people with disabilities in Taeon County, and installed and operated roasting production facilities to secure stable profits. KOWEPO plans to continuously develop business models supporting independence of those with disabilities in various ways to become an energy company that grows together with people who are underprivileged.



Eco-friendly Car Wash Shop Opening Ceremony



Nanum Café Opening Ceremony

Key Issues
Win-win Cooperation with Local Communities



Business Agreement Signing Ceremony

Improvement of Welfare Infrastructure

Rural Community Regeneration Project

In order to improve the community environment and create social value by resolving community issues such as clearing neglected marine debris (i.e. discarded nets), dealing with reduced numbers of fish, and a decrease in number of tourists, KOWEPO signed a business agreement with local residents, Chungnam Social Economic Support Center, and the Industrial Cooperation Agency of Hanyang Women's University for Mandae village in Taeon County. The company will actively participate in restoring the village's traditional culture and lead the development of sustainable farming and fishing village through the restoration of the communities.



Launching Ceremony of the 6th Mentor Group

KOWEPO Weepy School

[KOWEPO Weepy School] is a representative education sharing talent donation program of KOWEPO conceived to resolve the educational gap in the Taeon region and to provide quality educational opportunities to local youth with the goal of fostering future talent. Excellent college students across the country are providing learning guidance and career counseling to local youth as mentors, and the mentors are provided with opportunities to grow into talented persons with warm personality and effective leadership through the mentoring. Under the slogan of [Learning Yesterday Sharing Today], a total of 102 mentors have shared their dreams and hopes with total of 1,039 mentees over the past three years from 2017.



Career Searching Event

Beyond Dream Career Consulting Mentoring

[Beyond Dream Career Consulting Mentoring] is a mentoring program providing diverse consultations related to career advice. Led by quality masters of KOWEPO, the mentors share their field experiences and professional knowledge, and provide opportunities to visit their field of work for students at specialized high schools and Meister high school as well as other socially vulnerable youths. A total of 110 mentors have provided mentorship to 370 mentees over the past five years from 2015, contributing greatly to career searching of local youth.

Supporting for Culture and Art

KOWEPO supports various cultural and art events in the local communities to prevent local residents from being excluded from cultural benefits and contribute to improving the quality of life of the residents and the welfare infrastructure of the community.



Support for Local Communities to Overcome Corona Virus (COVID-19)

Recognizing the seriousness of the COVID-19 pandemic, KOWEPO immediately formed an emergency response committee led by the CEO to conduct various campaigns to prevent the Corona virus from spreading in communities. The committee also implemented supporting projects to revitalize the depressed local economy in various aspects.

Protecting People from the COVID-19 Pandemic

KOWEPO distributed face masks and pandemic prevention promotion leaflets in front of the bus terminal in Taeon County, Chungcheongnam-do to local residents and passengers to prevent COVID-19. In addition, other business divisions including Pyeongtaek Business Division also carried out supporting activities for the socially underprivileged (such as the elderly and children) in surrounding areas where the risk of infection was high, by delivering hand sanitizers to five welfare centers such as the Western Elderly Welfare Center and the Regional Children's Center. The company plans to continue its support. In addition, the company is fully committed to preventing infections of its employees and protecting the health of employees.



Distribution of COVID-19 Prevention Promotion Leaflets



Covid-19 Prevention Activities in the Local Communities

Protecting the 'Local Economy' from COVID-19 Pandemic

As part of efforts to revitalize the regional economy, which has slumped due to COVID-19, the company purchased flowers worth KRW 10 million and distributed them to employees at head offices to help flower farmers in the region that suffered a direct blow in sales due to cancellations of schools' graduation and entrance ceremonies in February, 2020. In addition, the company purchased KRW 50 million worth of Taeon Love Gift Certificate and has donated it to the Taeon County's Social Welfare Council, in addition to encouraging employees to actively shop in traditional markets using the gift certificate.



Supporting Local Flower Farmers



Shopping at the Traditional Markets

ISSUES
05



Corporate Culture

The Importance of the Corporate Culture

Development of new businesses and upgrade of core businesses in response to the rapidly changing business environment and technological development of the 4th industry require a future-oriented human resource. Professional education and training and finding talent are essential, and enterprise-wide efforts are needed to attract talent. In addition, as the work-family balance and promotion of women's human rights are emerging as social issues, the company's family-friendly management and gender equality activities are gaining importance. Cooperation between labor and management to improve the working environment of employees is becoming increasingly more important.

KOWEPO's Response

KOWEPO is leading a new paradigm within the power-generation industry, and is actively fostering future-oriented talent to leap forward as a comprehensive energy company by 2030. In addition, KOWEPO creates social values through the realization of family-friendly corporate culture policies and gender equality. The company also creates a flexible work culture to enhance work productivity by improving the quality of life of employees through sound work-family balance. In addition, KOWEPO strives to be a happy place for all by strengthening cooperation between labor and management.

Target Relating to UN SDGs



KOWEPO HIGHLIGHTS



Satisfaction with Education
(As of 2019)

79.4 points



Six Consecutive years
Generating Female Manager
(As of 2019)

**First among the
Power-generation
Companies**



Labor-Management
Happiness Index
(As of 2019)

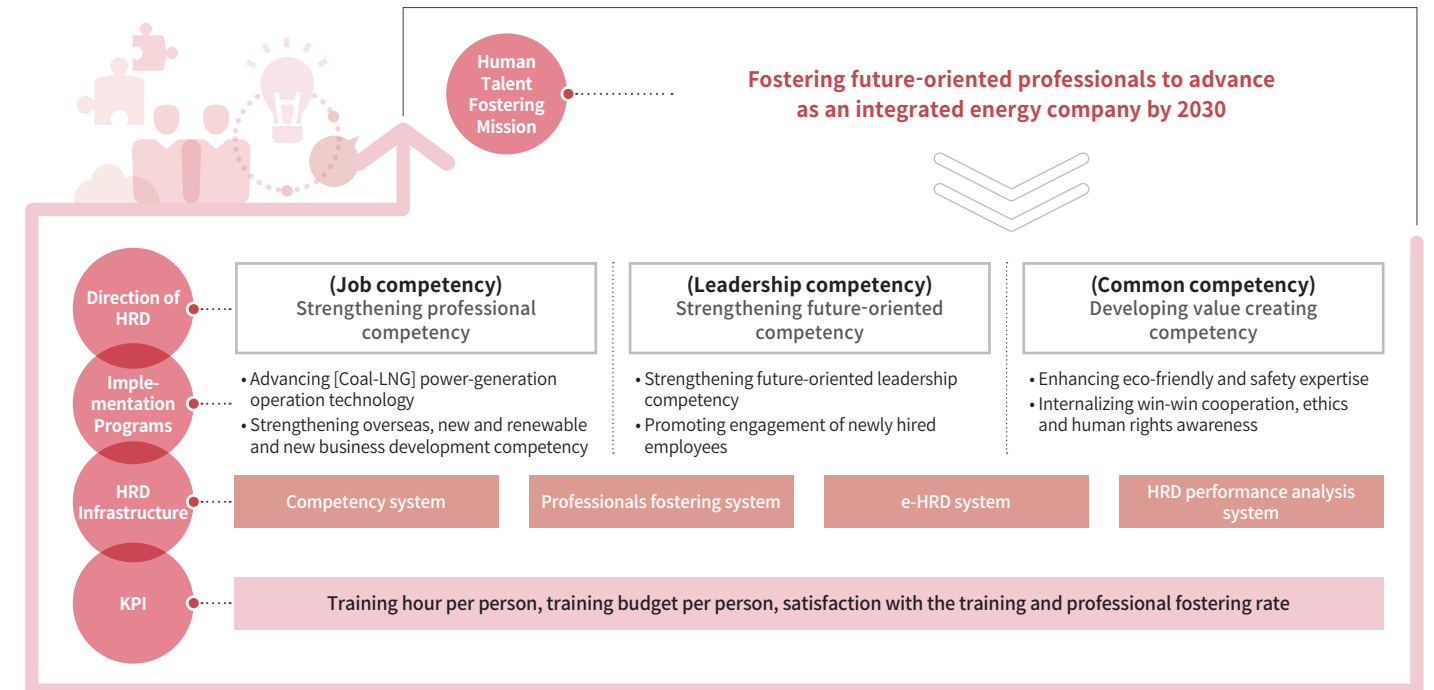
4.62 points

Human Resource Development

GRI 404-1, 404-2, 405-1

Mid- to Long-Term Human Resource Development System

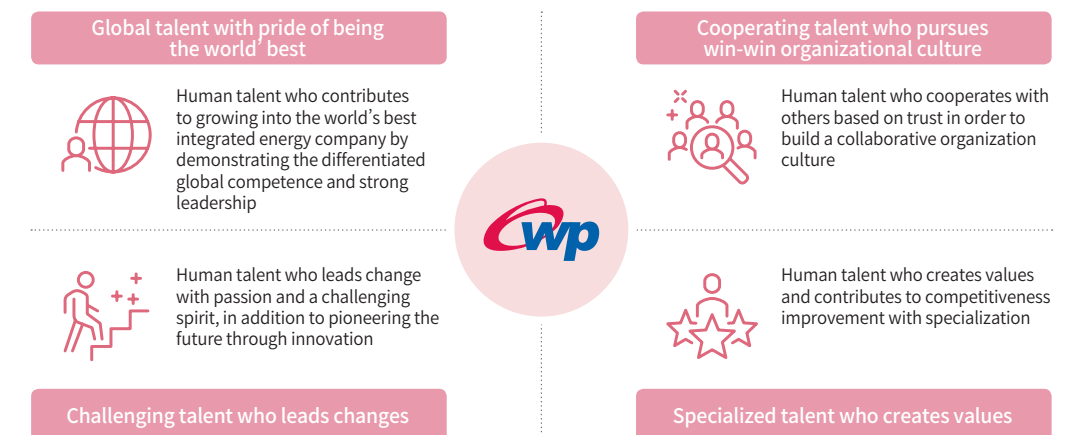
KOWEPO re-established the mid-to long-term human resource development system through the analysis of internal and external environment and stakeholder needs to set job, leadership, and common capacity enhancement as the direction of HRD, as well as to provide future-oriented professional manpower to advance as an integrated energy company by 2030.



Key Attributes of KOWEPO Employees

KOWEPO'S ideal human talent is composed of people with [Global, Challenge, and Organizational Competencies] that lead the changed paradigms of the energy industry, such as the energy transition and Industry 4.0.

Cultivation of human talents with global competence, challenging spirit, and organization capability to contribute to advancing as an integrated energy company by 2030







Human Resource Development

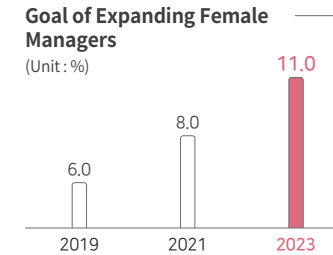
Training to Strengthen Employee Competency

Job Competency Training

KOWEPO has established a training course that reflects the paradigm shift in the power-generation industries to actively foster professionals in the four key areas for energy transition and new business technology development, and has expanded the existing course to enhance employees' expertise.

Direction of Training

Combined cycle power  Coal-centered → expanding training to combined cycle power, gas turbine and LNG fuel	Construction  Fostering core construction talents by expanding business management training based on the safety competency
Overseas, new& renewable  Expanding training to overseas business strategy and investment management, and benchmarking the overseas core technology	4th industry  Strengthening professional competence to secure smart power plant operation technology



Fostering Female Workforce

Expansion of Female Managers and Employment of Female Workers

KOWEPO is striving to increase the representation of women in our workforce. By expanding the number of female managers and recruits, we are overcoming the challenges posed by the low percentage of women in STEM professions such as the power generation industry. The company targets increasing the proportion of female managers to 11% by 2023, and strives to achieve its goals such as producing female managers (general manager level) for six consecutive years for the first time among power-generation companies. In addition, KOWEPO introduced a new [Gender Equal Employment System], and implemented preferential policies, such as the operation of a part-time work system to promote the employment of career interrupted women. The company plans to hire female workers comprising up to 20% of the employees.

Specialized Education for Female Talent

KOWEPO implements and expands education specialized for female talent. KOWEPO operates training for female leadership by position, and in 2019, the company created an advanced training course for general managers. In addition, the company expands the curriculum online and actively encourages attendance of conferences for female managers and of gender equality culture forums.

Category	Concept	Required competency	Curriculum
Position 2	Growth leadership	3 including role model	Advanced class for female manager
Position 3	Linkership	2 including relationship enforcement	Intermediate class for female manager
Position 4	Winnerplayer	3 including communication	Class for future female manager

Training Completion Rate per Person

100 %

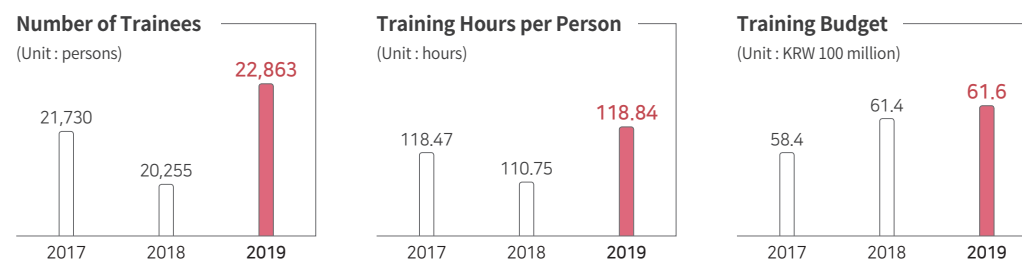
Leadership Competency Training

As the core roles required for each position change due to changes in the business environment, KOWEPO remodeled the necessary competencies of leaders and strengthened competency-based education and training in order to foster future-oriented professional manpower. KOWEPO analyzes the suitability of existing competencies, theoretical competencies, and the needs of internal employees to derive five new leadership competencies from 1 to 4 levels, and operated a total of 547 training courses.

Common Competency Training

KOWEPO enhances employees' knowledge in eco-friendly and safety measures in order to realize a safe society that protects people's safety and lives, as well as strengthening education to internalize win-win cooperation and ethical human rights awareness to fulfill its leading role in realizing social values. The company has diversified education programs to realize the value of [Safety First Management], and reinforced specialized education based on environmental issues, such as reducing fine dust and greenhouse gases. In addition, the company contributes to the formation of trust relationships with local communities by enhancing employees' communication and relationship-building capabilities through strengthened professional education for social values, such as establishment of a conflict and negotiation expert course, a social contribution innovation school course, and a human rights instructor training course.

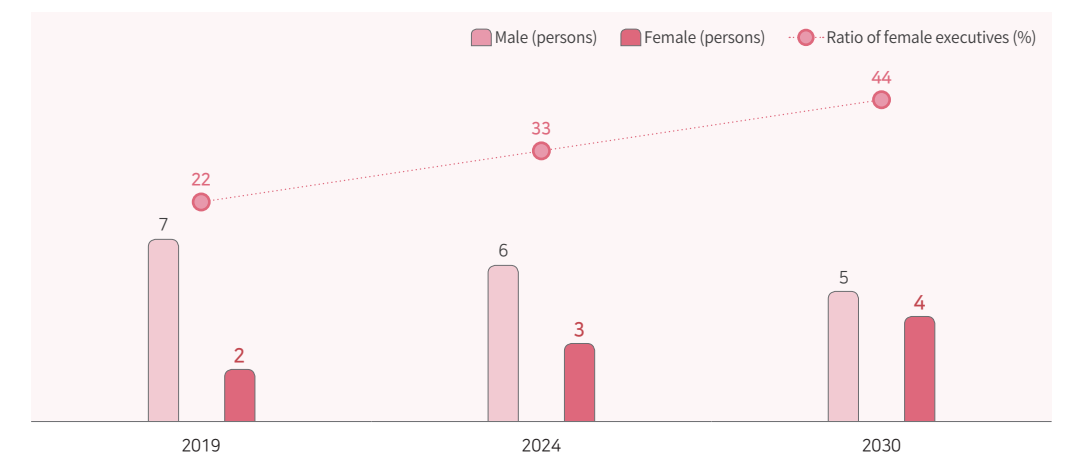
Annual Training Performance



Realization of Gender Equality for Executive Appointments

KOWEPO strives to contribute to the realization of a [Substantial gender equality society], the government's national policy by realizing gender equality in the appointment of executives. The company devised a plan to enhance the appointment of female executives. Upon expiration of the term of executives, the company has set goals for gender-equal executive appointment in consideration of appointing female executives. KOWEPO also appoints one out of two external members of the executive recommendation committee as women by analyzing executive appointment results. In addition, the company created a new bulletin board on its website for the [Goals for Gender Equal Executive Appointment] to support female workers for positions in the competition, and introduced the [Gender Balanced Recommendation System for Candidates for Executive] to institutionalize improvement measures and to prevent the problem of male bias among candidates recommended by executives.

Gender Equal Executive Appointment Roadmap



Key Issues
Promotion of Work-Family Life Balance

GRI 401-3

Creation of a Flexible Working Culture

Promotion of Flexible Working System

KOWEPO strives to establish various types of work and contribute to improving the quality of life of employees by promoting a flexible work system. The company provides all the managers of the company trainings to adopt a paradigm shift for work-family balance, in addition to creating a [Friday with family] culture to run an early work-out system. In addition, the company has settled a flexible work system that reflects the characteristics of each department and individuals by introducing various types of work through the implementation of the flexible work system and the remote work system.

Subject	Flexible work system			Remote work system	
	Flex-time work	Alternative work schedule	Compressed work	Remote work	Smart work
2018 (persons)	613	1,775	95	110	26
2019 (persons)	382	1,868	136	170	23

Creation of Extended Vacation Culture

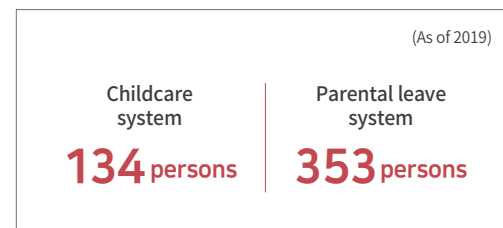
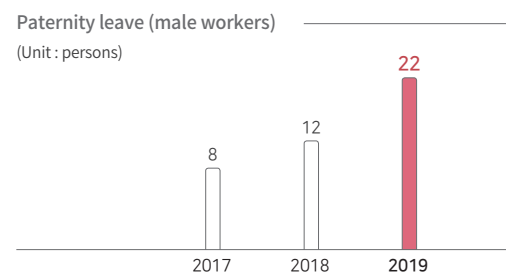
The company actively pursues realization of work-life balance of the employees by creating a culture of extended vacation. KOWEPO introduced the [Annual Leave Savings System] to allow employees to flexibly use their unused annual leave for a maximum of 25 days up to 10 years, and the company created [Compensation Leave System] to grant paid leave at 1.5 times the working hours for overtime and holiday work. In addition, the company encourages the use of bridge day vacations and includes the long-term annual use rate of department heads in the performance indicators in order to promote the use of extended vacations.

Family-friendly Management

Encouraging Childbirth and Childcare

The company implements family-friendly management practices to support employees' pregnancy, childbirth and childcare. KOWEPO operates an automatic parental leave system that automatically applies for parental leave when employees apply for maternity leave. KOWEPO calculates the period of parental leave when calculating the number of service years for promotion regardless of gender in order to promote the use of parental leave of male workers. In addition, the company has established a system to support childrearing of members with children under the age of 5 under which child care time of 2 hours a day and 480 days are provided. The company also operates a parental leave system.

Utilization results

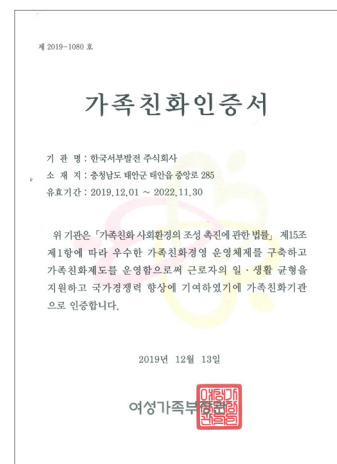


Stable Childcare and Maternity Protection

KOWEPO supports child-rearing practices by creating a workplace environment for stable childcare and maternity protection. KOWEPO has created a family working room, a family-friendly space where employees can work while caring for their children. The company also provides a rest complex space, a MOVE lounge, and a women-only rest area. In addition, the company operates four workplace daycare centers targeting kids aged 0-5 years, and now 196 children are growing in a stable childcare environment.



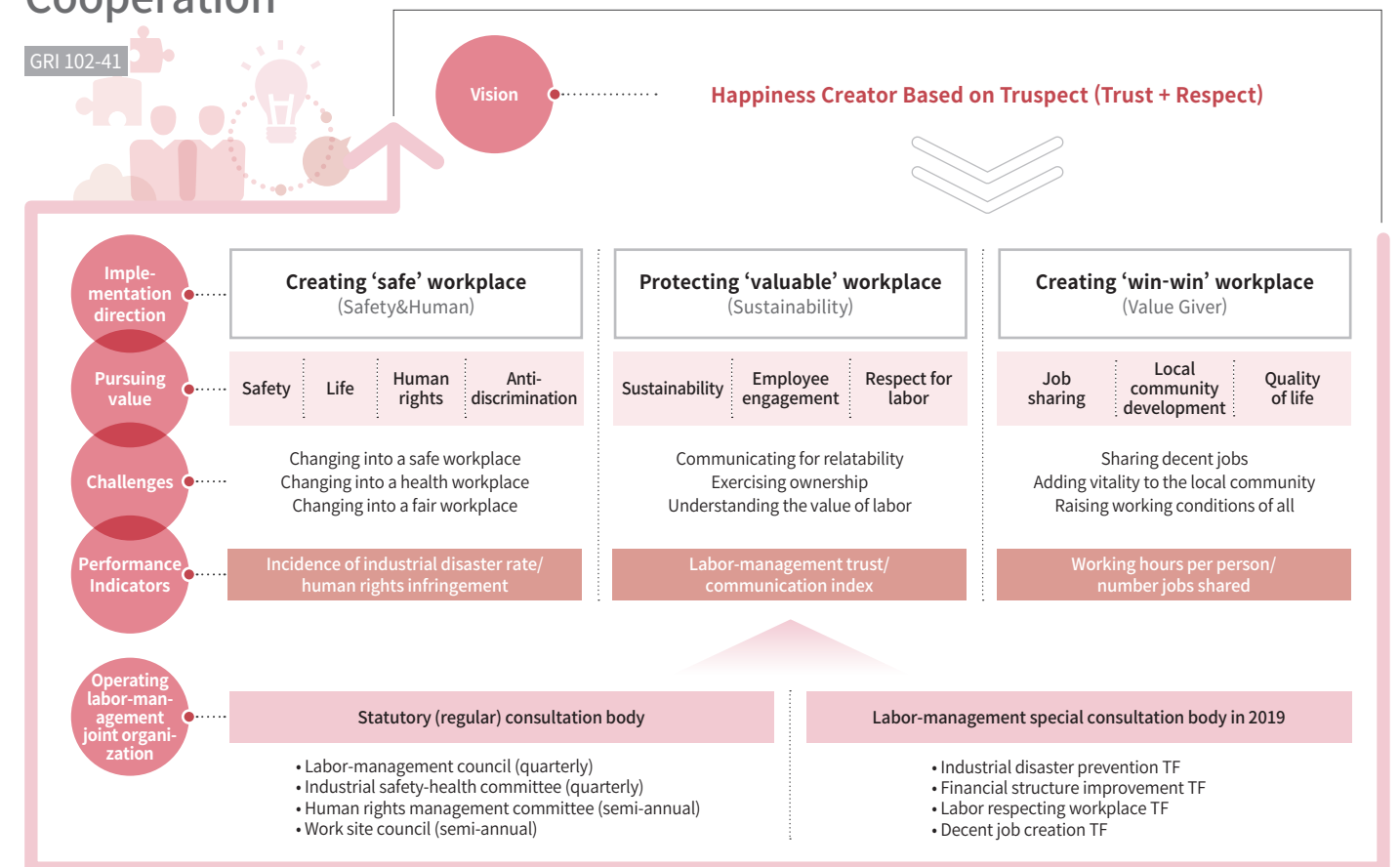
Workplace daycare center activities



Certification of family friendly management

Strengthening Labor-Management Cooperation

GRI 102-41



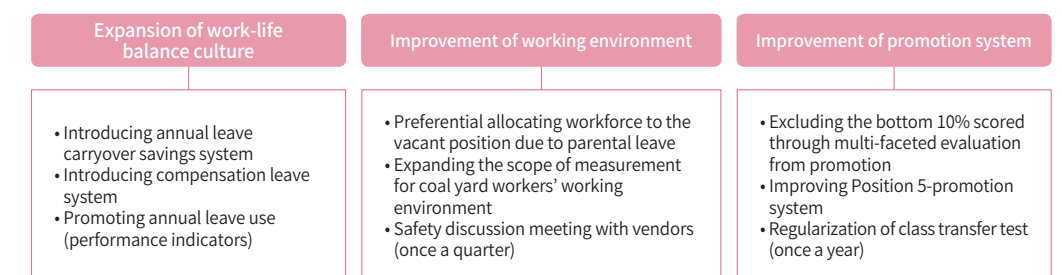
Establishment of Three Major Labor and Management Plans

KOWEPO has established three major labor-management plans to strengthen cooperation between labor and management, to respond to external expectations, and to focus on solving current issues in order to build a labor-management relationship that creates happiness based on trust and respect.

Strengthening Labor-Management Communication

Labor-Management Council Operation Performance

The company improves the working conditions of both KOWEPO and vendors, while creating a sound corporate culture through cooperation between labor and management. The company completed the expansion of work-family balance culture, improvement of working environment and promotion system focused on the labor-management council and the Industrial Safety and Health Committee, in 2019.



Strengthening Labor-Management Cooperation



The First MOVER Workshop

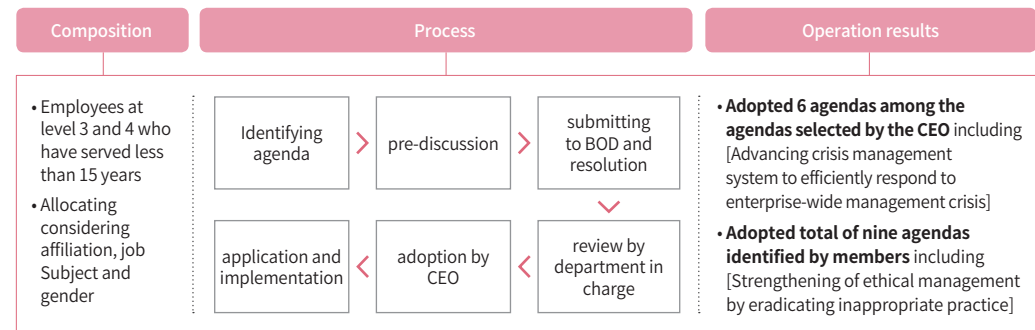
Revision of Collective Agreements

KOWEPO continues to sign supplementary agreements to the collective agreements in order to protect the rights and interests of workers and improve the working environment. In 2019, the company revised the employment rules and signed supplementary agreements to eradicate abuse of power and create a family-friendly culture.

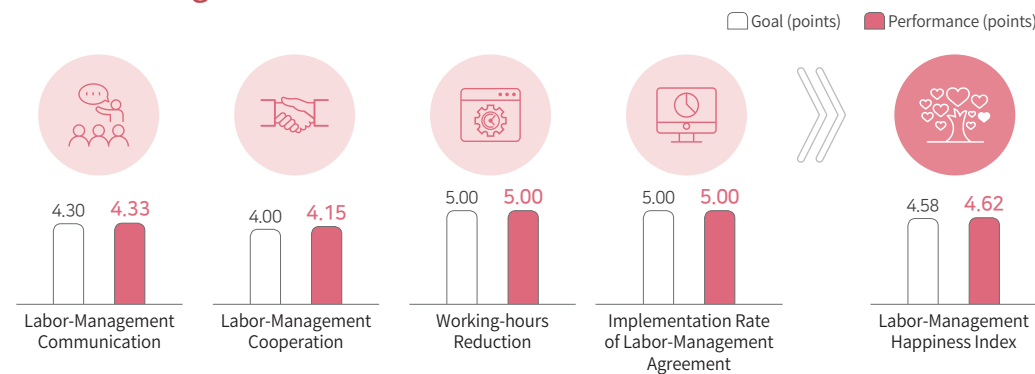
Subject	Details	Regulation
Eradication of power abuse	Prohibit bullying in the workplace and stipulate disciplinary measures to protect workers' human rights,	Chapter 10 of employment rules
Family care	Creating new leave policy for workers to allow them to take care of their family under emergency situations caused by illness, accident, old age or child rearing (family care leave) : Up to 10 days per year	Article 33 of collective agreement
	Expanding family care subjects (adding grandparents and grandchildren), expanding conditions for leave (adding care and parenting leave)	Article 32 of collective agreement
Maternity leave	Expanding spousal Maternity leave (5 → 10 days) and extending the application period (30 → 90 days)	Article 66 of collective agreement
Nursing time	Expanding subjects of working hours reduction during child-rearing period (5 → under 8 years old or under 2 nd grade of elementary school)	Article 74 of collective agreement

Operation of Young BOD

In March 2019, the company launched the 'Young Board of Directors' called [The First MOVER] to foster future leaders and strengthen internal communication. KOWEPO reflects fresh ideas and flexible thinking of young employees to improve management through the Young BOD, and provides opportunities for future generations to engage in management, thereby enhancing employees' interest and strengthening their ability to respond as a management agent. In addition, the Young BOD plays the role of [The First MOVER] as a future leader leading new changes by resolving conflicts and renewing a depressed organizational atmosphere through direct communication with the management. The Young BOD who lead new changes by leading young generations with a willingness to change and challenge will continue to promote communication within the organization, resolve conflict, and engage in various communication activities that can lead employees to participate in management issues.



Labor-Management Index



APPENDIX

- 90p Sustainability Management Data
- 99p GRI Standards Index
- 101p Greenhouse Gas Specifications
- 102p Third Party's Assurance Statement
- 104p Supporting Global Initiatives
- 106p Awards and Association Membership Status

Sustainability Management Data

Economic Data

Summary Consolidated Financial Statement

Subject		Unit	2017	2018	2019
Assets	Current Assets	KRW million	1,066,099	1,246,379	1,004,076
	Non-current Assets	KRW million	8,562,572	8,625,303	9,478,412
	Total Assets	KRW million	9,628,671	9,871,682	10,482,488
Capital and Liabilities	Total Capital	KRW million	3,882,393	3,899,792	3,838,122
	Current Liabilities	KRW million	1,297,361	1,239,362	1,299,188
	Non-current Liabilities	KRW million	4,448,917	4,732,528	5,345,178
	Total Liabilities	KRW million	5,746,278	5,971,890	6,644,366

Summary Consolidated Income Statement GRI 102-45

Subject	Unit	2017	2018	2019
Sales	KRW million	4,222,449	4,869,158	4,468,579
Cost of sales	KRW million	3,748,802	4,632,109	4,297,985
Selling, General and administrative expenses	KRW million	112,163	96,489	95,894
Operating income	KRW million	361,484	140,560	74,701
Other income	KRW million	4,732	4,725	5,062
Other expenses	KRW million	6,123	6,580	8,044
Other profits (losses)	KRW million	(9,351)	17,914	(3,514)
Financial income	KRW million	172,248	91,572	96,549
Cost of financing	KRW million	311,071	215,155	249,743
Loss related to associates and joint ventures	KRW million	(63,001)	(36,910)	(29,811)
Net profit before tax (loss)	KRW million	148,918	(3,874)	(114,799)
Corporate tax (revenue)	KRW million	46,089	30,947	(68,182)
Net profit (loss)	KRW million	102,829	(34,821)	(46,617)
Other comprehensive income	KRW million	25,771	81,217	(14,851)
Total comprehensive income	KRW million	128,600	46,396	(61,468)
Number of companies included in the consolidation	Companies	20	21	23

Shareholder Status

Subject	Unit	2017	2018	2019
KEPCO	%	100	100	100

Government subsidy GRI 201-4

Subject	Unit	2017	2018	2019
Subsidy	KRW 100 million	0	0	0

Economic Value Distribution GRI 201-1

Subject		Unit	2017	2018	2019	Remark
Economic value creation		KRW 100 million	44,640	50,214	45,982	Sum of sales and other income
Economic value distribution	Vendors	KRW 100 million	38,093	45,585	42,052	Amount of all products and services purchased by KOWEPO for its business
	Employees	KRW 100 million	2,169	2,206	2,597	Wage, retirement benefit, and welfare expense
	Shareholders and investors	KRW 100 million	1,514	1,392	1,480	Interest to the creator and shareholders dividends
	Government	KRW 100 million	696	564	-374	Tax and duties and corporate tax based on the financial statements
	Reinvestment	KRW 100 million	2,107	401	147	Source for future reinvestment and retaining of profits
	Local community	KRW 100 million	61	66	80	Contribution to local communities
	Total	KRW 100 million	44,640	50,214	45,982	

Power Plant Operation

Subject	Unit	2017	2018	2019
Installed capacity	MW	11,780	11,322	11,338
Volume of power generation	GWh	47,936	51,903	46,481
Volume of power transmission	GWh	44,564	48,007	43,464
Forced outage factor	%	0.074	0.121	0.018
Amount of loss by forced outage	%	0.066	0.118	0.030

Average Operating Rate of Each Power Plant

Subject	Unit	2017	2018	2019
Taeon Thermal Power	%	90.11	83.02	78.70
Pyeongtaek Thermal Power	%	91.42	93.49	93.58
Pyeongtaek Combined Cycle	%	90.45	86.52	98.09
Seoincheon Combined Cycle	%	96.60	96.12	97.70
Gunsan Combined Cycle	%	91.89	97.39	86.58
Others	%	-	-	-
Total	%	91.45	87.76	85.82

Sustainability Management Data

Environmental Data

Investment in Environmental Facilities

Subject	Unit	2017	2018	2019
Total investment in environment	KRW 100 million	1,438	2,596	916
Operation expense in environmental sectors	KRW 100 million	813	883	1,762
Development expense in environmental sectors	KRW 100 million	18	31	11
Total	KRW 100 million	2,269	3,510	2,869

Greenhouse Gas Emission GRI 305-1, 305-2

Subject	Unit	2017	2018	2019
SCOPE 1 (direct emission)	10,000tCO ₂ eq	3,679	3,782	3,452
SCOPE 2 (indirect emission)	10,000tCO ₂ eq	18	14	16
Total	10,000tCO ₂ eq	3,697	3,796	3,467
Basic unit	tCO ₂ eq/MWh	0.812	0.770	0.784

Emission Rate Trading Scheme

Subject	Unit	2017	2018	2019
Allocated	10,000tCO ₂ eq	3,795	3,677	3,469
Emission	10,000tCO ₂ eq	3,696	3,796	3,467

Greenhouse Gas Emission by Each Energy Source

Subject	Unit	2017	2018	2019
Solid (coal, etc.)	10,000tCO ₂ eq	3,324	3,298	3,035
Liquid (heavy oil, etc.)	10,000tCO ₂ eq	78	88	40
Vapor (natural gas)	10,000tCO ₂ eq	265	384	368
Others (limestone, purchased power, etc.)	10,000tCO ₂ eq	30	26	24
Total	10,000tCO ₂ eq	3,697	3,796	3,467

Energy Usage GRI 302-1

Subject	Unit	2017	2018	2019
Fuel	TJ	432,463	457,543	412,000
Electricity (including others)	TJ	3,794	2,844	3,196
Total	TJ	436,257	460,387	415,196
Basic unit	TJ/GWh	9.44	7.77	7.78

Energy Usage by Each Energy Source GRI 302-1

Subject	Unit	2017	2018	2019
Solid (coal, etc.)	TJ	369,999	369,783	122,895
Liquid (heavy oil, etc.)	TJ	10,838	12,095	5,670
Vapor (natural gas)	TJ	51,626	75,645	253,447
Others	TJ	3,796	2,858	33,186
Total	TJ	436,259	460,382	415,198

Fuel Use

Subject	Unit	2017	2018	2019	
Power-generation Fuel	Bituminous coal	1,000 tons	15,567	15,715	14,030
	Heavy oil	1,000KL	243	278	123
	LNG	1,000 tons	962	1,395	1,336
	Bio heavy oil	1,000KL	-	4.7	-
	Organic soild fuel	1,000 tons	81.7	67.7	66.9
	Wood pallets	1,000 tons	108.5	82.5	86.1
Power plant water	1,000 tons	9,410	9,093	8,719	
Limestone	1,000 tons	258	277	185	
Chemicals	1,000 tons	18.5	18	20	

Sustainability Management Data

Atmospheric Pollutant Emission

Subject		Unit	2017	2018	2019
Atmospheric pollutant emission level	NOx	1,000 tons	12.5	9.8	7.0
	SOx	1,000 tons	9.1	7.0	5.0
	Dust	1,000 tons	0.7	0.6	0.3
Basic unit emission level (pollutant emission per 1kWh electricity)		g/kWh	0.466	0.337	0.267

Water Pollutant Emission

Subject		Unit	2017	2018	2019
Water pollutant emission level	COD	ton	19.7	25.5	25.8
	SS	ton	7.5	8.9	10.8
	T-N	ton	15.1	23.9	28.2
	T-P	ton	0.395	0.237	0.269

Amount of Power-generation Byproducts* Produced and Waste Recycling GRI 306-3, 306-4

Subject	Unit	2017	2018	2019
Generation	1,000 tons	2,093	2,250	1,707
Recycling	1,000 tons	2,149	1,581	1,322
Recycling rate	%	103	70	77

* Power-generation Byproduct : refined ash, pond ash, desulfurized plaster, sulfuric acid

Social data

Employees GRI 102-8, 405-1

Subject		Unit	2017	2018	2019
Total number of employees		Persons	2,354	2,438	2,505
Employment type	Permanent employee	Male	Persons	2,067	2,143
		Female	Persons	287	295
Female ratio		%	12.2	12.1	12.1
Female	Female manager (Deputy general manager and above)		Persons	30	35
	Female manager ratio		%	9.6	10.9

Employee Hiring Status GRI 401-1

Subject		Unit	2017	2018	2019
Office workers	New graduates	Persons	24	12	4
	Experienced	Persons	1	0	0
Technical	New graduates	Persons	155	109	143
	Experienced	Persons	0	0	0
Othes	New graduates	Persons	18.75	19.75	14.25
	Experienced	Persons	0	0	0

Social Equilibrium Hiring GRI 405-1

Subject	Unit	2017	2018	2019
Female	Persons	32.5	16.25	20.5
People with disabilities	Persons	4.75	9.75	7
Talents from regions outside of capital	Persons	89	63.75	87.25
Talent from relocated region	Persons	22	15	24
High school graduates	Persons	24.75	20.75	22

Sustainability Management Data

Members of Labor Union

Subject	Unit	2017	2018	2019
Applicable employees	Persons	1,658	1,707	1,782
Members of labor union	Persons	1,615	1,596	1,734
Labor union enrollment rate	%	97.4	93.5	97.3

Employment Stability GRI 401-1

Subject	Unit	2017	2018	2019
Average years of service	Month	180	175	175
Employee turnover rate	%	0.8	1.9	1.7

Childbirth and Parental Leave GRI 401-3

Subject	Unit	2017	2018	2019	
Maternity leave (Female employees)	Users	Persons	15	20	20
Spouse maternity leave	Users	Persons	72	74	68
Parental leave	Males	Persons	7	11	25
	Females	Persons	50	53	56
	Return after parental leave	%	98.24	100	100

Support for Overseas Marketing by Small Vendors

Subject	Unit	2017	2018	2019
Counselling outcome	KRW million	210	252	124
Contract outcome	KRW million	45	48	8
Supported companies	Companies	95	102	89

Employees' Education GRI 404-1

Subject	Unit	2017	2018	2019
Education hours per 1 person	Hours	118.47	110.75	118.84
Education cost per 1 person	KRW 1,000	2,750	2,722	2,596
Education budget	KRW 100 million	58.4	61.4	61.6
Educated personnel	Persons	21,730	20,255	22,863

Socially Responsible Purchasing

Subject	Unit	2017	2018	2019
Products from small companies	KRW 100 million	2,749.1	3,470.4	2,977.1
R&D products	KRW 100 million	257.9	291.2	309.8
Products from female-owned business	KRW 100 million	309.2	354.2	350.4
Products from people with disabilities-owned business	KRW 100 million	63.3	70.8	86.6

Contract Transparency

Subject	Unit	2017	2018	2019
Total number of contracts	Case	1,233	1,186	1,187
Negotiated contracts	Case (%)	343(28)	344(29)	488(41)
Competitive bidding	Case (%)	890(72)	842(71)	699(58)

Electronic Bidding

Subject	Unit	2017	2018	2019
Total number of biddings	Case	1,233	1,186	1,187
Total number of electronic biddings	Case	1,230	1,168	1,185
Rate of electronic biddings	%	99.7	98.5	99.8

Sustainability Management Data

Donation and Social Volunteer

Subject	Unit	2017	2018	2019
Donation	KRW 100 million	61	66	80
Funds participated by employees	KRW 100 million	1.4	1.29	1.13
Employees in voluntary services	Persons	2,046	1,932	1,982
Service time	Hours	35,710	33,377	36,006
Average voluntary service hours per person	Hours	17.45	17.28	18.17

Investment in Local Communities

Subject	Unit	2017	2018	2019
Support of communities around power plants	KRW 100 million	32.0	30.0	35.9
Energy welfare of neglected groups	KRW 100 million	1.9	6.5	9.3
Purchase of Onnuri gift certificates	KRW 100 million	7.4	6.6	8.3

Industrial Accident Rate (Announced by Ministry of Employment and Labor)

Subject	Unit	2017	2018	2019
National occupational accident rate	%	0.48	0.54	0.58
Industrial accident rate of public corporations	%	0.40	0.53	0.59
KOWEPO	Industrial accident rate	0.13	0.16	0.05
	Occupational accident rate	0.02	0.02	0

Employee Safety

Subject	Unit	2017	2018	2019
Deaths per 10,000 persons	%	0	0	0
Number of safety accidents	case	0	0	1

GRI Standards Index

Topic	Disclosure			Page
	No.	Title	Core	
GRI 102 : Organizational profile	102-1	Organization name	0	8
	102-2	Activities, brands, products and services	0	8
	102-3	Head office location	0	8
	102-4	Business area	0	12-19
	102-5	Organizational ownership legal form	0	8
	102-6	Markets in which KOWEPO provides services	0	12-19
	102-7	Organizational size	0	8
	102-8	Information on employees and workers	0	95
	102-9	Supply chain of the organization	0	20-21
	102-10	Significant changes in organization and supply chain	0	10-11
	102-11	Prevention principles or approaches	0	30-31
	102-12	External initiative	0	104-105
	102-13	Association membership	0	107
GRI 102 : Strategy	102-14	Statement of sustainability management by the top decision maker	0	4-5
	102-15	Core influence, risks and opportunities		30-31
GRI 102 : Ethics and integrity	102-16	Values, principles, standards and codes of conduct	0	26-27
	102-17	Ethical guidance and grievance mechanisms		26-27
GRI 102 : Governance	102-18	Corporate governance	0	24-25
	102-22	Top decision-making body and committees		24-25
	102-23	Chairman of the top decision-making body		24
	102-27	Collective intelligence of the top decision-making body		24-25
	102-29	Identification and management of economic, environmental and social impacts		25
	102-31	Review of economic, environmental and social topics		25
	102-34	Total number of agenda		25
GRI 102 : Stakeholder engagement	102-40	List of stakeholder groups	0	32-33
	102-41	Collective agreement	0	88
	102-42	Identification and selection of stakeholders	0	32-33
	102-43	Stakeholders engagement approach	0	33
	102-44	Key topics and raising issues	0	33
GRI 102 : Reporting practice	102-45	Entities included in the consolidated financial statements	0	90
	102-46	Definition of report content and topic boundaries	0	3
	102-47	Materiality topic list	0	35
	102-48	Information re-description	0	2
	102-49	Report changes	0	2
	102-50	Reporting period	0	2
	102-51	Date of most recent report	0	2
	102-52	Reporting cycle	0	2
	102-53	Inquiries on report	0	2
	102-54	Reporting method according to GRI Standards	0	2
	102-55	GRI index	0	99-100
	102-56	External assurance	0	101-103

GRI Standards Index

Topic	Disclosure			Page
	No.	Title	Core	
GRI 103 : Management Approach	103-1	Description of materiality topics and their boundaries		35
	201-1	Direct economic value creation and distribution		41~44, 91
GRI 201 : Economic Performance	201-2	Financial impacts and other risks and opportunities from climate change		42~44 51~52
	201-4	Financial supports from the government		90
GRI 203 : Indirect Economic Impacts	203-1	Investment in infrastructure and service support activities for the public interest		42, 78~81
	203-2	Significant indirect economic ripple effects and impacts		40, 70~76, 78~79
GRI 205 : Anti-corruption	205-1	Corruption risk assessment		26~27
	205-2	Notification and training on anti-corruption policies and procedures		26~27
GRI 302 : Energy	302-1	Internal energy consumption		93
GRI 303 : Water	303-1	Interaction with water as common resource		54
GRI 305 : Emissions	305-1	Direct greenhouse gas emissions (scope 1)		92
	305-2	Indirect greenhouse gas emissions (scope 2)		92
	305-5	Reduction of greenhouse gases		51~52
GRI 306 : Waste	306-2	Waste-related impact management		55
	306-3	Waste generation		55, 94
	306-4	Waste recycling		55, 94
GRI 401 : Employment	401-1	New hiring and turnover		95~96
	401-3	Parental leave		96
GRI 403 : Occupational Health and Safety	403-1	Occupational Safety and Health Management System		59~60
	403-2	Hazard identification, risk assessment and accident investigation		60~63
	403-3	Occupational health services		59
	403-5	Safety and health training for workers		62
	403-6	Promotion of workers' health		59
	403-7	Prevention and mitigation of occupational health and safety impacts linked to business		59~63
	404-1	Average annual training hours per worker		84, 97
GRI 404 : Training and Education	404-2	Programs to strengthen worker capacity and support transfer		84~85
	GRI 405 : Diversity and Equal Opportunity	405-1	Diversity of top decision-making body and staff	85
GRI 412 : Human Rights Assessment	412-2	Employees education on human rights policies or procedures		29
GRI 413 : Local Communities	413-1	Community engagement, impact assessment and development program		77~81
GRI 414 : Supplier Social Assessment	414-2	Negative social impacts in the supply chain and actions taken		59~60

Greenhouse Gas Specifications

Target of assurance

Korea Western Power Co., Ltd. 2019 Greenhouse Gas Emission Energy Usage Specifications

Assurance Standards

Assurance guidelines for operating the GHG emissions trading system, guidelines for reporting and certification of GHG emissions trading systems, and monitoring plans distributed to NGMS

Assurance Procedures

The assurance was conducted on the greenhouse gas emission specification according to the guidelines on the reporting and certification of the GHG emission trading system and the monitoring plan distributed to NGMS, and the assurance level was performed to satisfy the reasonable assurance level.

Limitations

The assurance is applied with the sampling method in accordance with the assurance plan recognized by the National Institute of Environmental Research for the specification of GHG emission and related data and information provided by Korea Western Power Co., Ltd., based on the "Regulated guidelines and monitoring plans distributed to NGMS." Therefore, there is a limitation to the detection errors that can be caused by sampling limitation.

Opinions

- Materiality test result : $\frac{[(\text{final result value after assurance} - \text{specification result value}) / (\text{total amount of greenhouse gas emissions of company finally reported in the specification})] \times 100}{[(34,673,737 - 34,673,737) / 34,673,737] \times 100} = 0\%$
- Korea Western Power Co., Ltd.'s 2019 GHG emission specification satisfies the materiality criteria and was prepared using accurate parameters and activity data as a whole.
- Therefore, it was decided that the greenhouse gas emissions described in the specification were "appropriate" according to the guidelines for reporting and certification of the greenhouse gas emission trading system.

Comprehensive Opinion

Through the assurance, it is certified that GHG emissions and energy consumption of Korea Western Power Co., Ltd. were appropriately collected, prepared, and reported in accordance with the guidelines, and that emissions of key emission facilities were calculated and reported without omission.

March 6, 2020

Kim In-soo,
President of Shinwa Engineering Co., Ltd



Third Party's Assurance Statement

To the Readers of KOREA WESTERN POWER Sustainability 2020 :

Foreword

Korea Management Registrar Inc. (hereinafter "KMR") has been requested by of KOREA WESTERN POWER to verify the contents of its KOREA WESTERN POWER Sustainability 2020 (Hereby referred to as "the Report"). KOREA WESTERN POWER is responsible for the collection and presentation of information included in the Report. KMR's responsibility is to carry out assurance engagement on specific data and information in the assurance scope stipulated below.

Scope and standard

KOREA WESTERN POWER describes its efforts and achievements of the corporate social responsibility activities in the Report. KMR performed a type2, moderate level of assurance using AA1000AS (2008) and SRV1000 from KMR Global Sustainability Committee as assurance standards. KMR's assurance team (hereinafter "the team") evaluated the adherence to Principles of Inclusivity, Materiality and Responsiveness, and the reliability of the selected GRI Standards indices as below, where professional judgment of the team was exercised as materiality criteria.

The team checked whether the Report has been prepared in accordance with the 'Core Option' of GRI Standards which covers the followings.

- GRI Standards Reporting Principles
- Universal Standards
- Topic Specific Standards
 - Management approach of Topic Specific Standards
 - Economic Performance : 201-1, 201-2, 201-4
 - Indirect Economic Impacts : 203-1, 203-2
 - Anti-Corruption : 205-1, 205-2
 - Energy : 302-1
 - Water : 303-1
 - Emissions : 305-1, 305-2, 305-5
 - Effluents and Waste : 306-2, 306-3, 306-4
 - Employment : 401-1, 401-3
 - Occupational Health and Safety : 403-1, 403-2, 403-3, 403-5, 403-6, 403-7
 - Training and Education : 404-1, 404-2
 - Diversity and Equal Opportunity : 405-1
 - Human Rights Assessment : 412-2
 - Local Communities : 413-1
 - Supplier Social Assessment : 414-2

This Report excludes data and information of joint corporate, contractor etc. which is outside of the organization, i.e. KOREA WESTERN POWER, among report boundaries.

Our approach

In order to verify the contents of the Report within an agreed scope of assurance in accordance with the assurance standard, the team has carried out an assurance engagement as follows :

- Reviewed overall report
- Reviewed materiality test process and methodology
- Reviewed sustainability management strategies and targets
- Reviewed stakeholder engagement activities
- Interviewed people in charge of preparing the Report

Our conclusion

Based on the results we have obtained from material reviews and interviews, we had several discussions with KOREA WESTERN POWER on the revision of the Report. We reviewed the Report's final version in order to confirm that our recommendations for improvement and our revisions have been reflected. When reviewing the results of the assurance, the assurance team could not find any inappropriate contents in the Report to the compliance with the principles stipulated below. Nothing has come to our attention that causes us to believe that the data included in the verification scope are not presented appropriately.

- **Inclusivity** | KOREA WESTERN POWER is developing and maintaining stakeholder communication channels in various forms and levels in order to make a commitment to be responsible for the stakeholders. The assurance team could not find any critical stakeholder KOREA WESTERN POWER left out during this procedure.
- **Materiality** | KOREA WESTERN POWER is determining the materiality of issues found out through stakeholder communication channels through its own materiality evaluation process, and the assurance team could not find any critical issues left out in this process.
- **Responsiveness** | The assurance team could not find any evidence that KOREA WESTERN POWER's counter measures to critical stakeholder issues were inappropriately recorded in the Report.

We could not find any evidence the Report was not prepared in accordance with the 'Core Option' of GRI standards.

Recommendation for improvement

We hope the Report is actively used as a communication tool with stakeholders and we recommend the following for continuous improvements.

- Korea Western Power developed mid- to long-term investment plans by product, proposed a roadmap for power generation energy sources and established a foundation for hydrogen production business, creating sustained financial values. It also distinguished industrial safety and disaster safety and provided detailed descriptions along with a balanced report on negative issues such as safety incidents. We recommend that the company shorten the reporting cycle to a year for the timeliness of the data and strengthen the report on quantitative performance for clarity.

Our independence

With the exception of providing third party assurance services, KMR is not involved in any other KOREA WESTERN POWER's business operations that are aimed at making profit in order to avoid any conflicts of interest and to maintain independence.

July, 15th, 2020
CEO

E. J. Hwang



SRV1000
Sustainability Committee Assurance



AA1000
Licensed Assurance Provider
000-129










Supporting Global Initiatives GRI 102-12

Supporting UN SDGs

The UN Sustainability Development Goals (UN SDGs) are the largest joint goals, which will be implemented between 2016 and 2030, adopted by the United Nations and the international community after the Millennium Development Goals (MDGs) ended in 2015. Seventeen global priorities were identified at the UN General Assembly in September 2015 in order to solve universal and economic, environmental, safety and social issues for humankind, such as poverty and disease, and build inclusive economic growth.

KOWEPO is an energy company that creates happiness for all persons and supports UN SDGs and proactively strives to achieve these goals. In the value chain, the company links strategies of core businesses with SDGs to select sustainable development targets and promote various action plans.

UN SDGs Activities

SDGs	Major relevant activities	Page
 Goal 1 NO POVERTY	<ul style="list-style-type: none"> Offering social jobs for senior persons Implementing rural village restoration project 	79-80
 Goal 2 ZERO HUNGER	<ul style="list-style-type: none"> Establishing smart farm using power plant hot waste water WP Social Flower 	78
 Goal 3 GOOD HEALTH AND WELL-BEING	<ul style="list-style-type: none"> Improving risk factors in power plant sites Establishing smart safety management system 	59-60
 Goal 4 QUALITY EDUCATION	<ul style="list-style-type: none"> WP Weezy School Beyond Dream Career Consulting Mentoring 	80
 Goal 5 GENDER EQUALITY	<ul style="list-style-type: none"> Expanding female managers and female recruitment Implementing the goal of gender equality in appointing executives 	85
 Goal 6 CLEAN WATER AND SANITATION	<ul style="list-style-type: none"> Zero discharging desulfurized wastewater 	54
 Goal 7 AFFORDABLE AND CLEAN ENERGY	<ul style="list-style-type: none"> Expanding new and renewable energy business Securing the foundation for commercialization of hydrogen production 	43-45
 Goal 8 DECENT WORK AND ECONOMIC GROWTH	<ul style="list-style-type: none"> Expanding job creation in public and private sectors Laying the foundation for the demonstration construction of domestic gas turbines 	67-69
 Goal 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	<ul style="list-style-type: none"> Creating foundation for localization of power-generation equipment Fostering the 4th industrial innovation technology ecosystem 	45-47, 75-76

SDGs	Major relevant activities	Page
 Goal 10 REDUCED INEQUALITIES	<ul style="list-style-type: none"> Socially equitable recruitment Building a business model for independence of people with disabilities 	68, 79
 Goal 11 SUSTAINABLE CITIES AND COMMUNITIES	<ul style="list-style-type: none"> Social Innovation Change Maker 	77
 Goal 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	<ul style="list-style-type: none"> Implementing fine dust reduction measures Disclosing atmospheric environment information 	53-54
 Goal 13 CLIMATE ACTION	<ul style="list-style-type: none"> Implementing GHG reduction project Securing and demonstrating CCU technology 	51-52
 Goal 14 LIFE BELOW WATER	<ul style="list-style-type: none"> Introducing new technology for water and wastewater process 	54
 Goal 15 LIFE ON LAND	<ul style="list-style-type: none"> Operating resource recycling power plant Expanding recycling of byproducts of power plants 	55
 Goal 16 PEACE, JUSTICE AND STRONG INSTITUTIONS	<ul style="list-style-type: none"> Establishing ethical management advanced system Building a virtuous cycle human rights ecosystem operation system 	26-28
 Goal 17 PARTNERSHIPS FOR THE GOALS	<ul style="list-style-type: none"> Supporting SMEs to enter the overseas market Supporting small-scale solar power companies 	71

Awards and Association Membership Status

Year	Award Name	Awarding Agency
2015	Selected as the Outstanding Agency for Government 3.0 Evaluation of Public Institution	Ministry of Interior and Safety
2015	Ranked No. 1 in 2015 Sustainability Index of Korea Sustainability Contest	Ministry of Trade, Industry and Energy
2015	Grand Award in 2015 Management Quality of Korea Management Award	Korea Management Association
2015	Presidential Award in 2015 New Technology Commercialization Contest	KATS
2015	Presidential award and Prime ministerial award in the 14 th Korea Safety Award	Ministry of Public Safety and Security
2015	Commercialization of New Technology (Presidential award)	Ministry of Trade, Industry and Energy
2015	Received Ministerial Award for the purchase of products from the severely disabled	Ministry of Health and Welfare
2015	Presidential Award for job creation and overseas migration of young persons	Ministry of Employment and Labor
2016	Outstanding workplace for a voluntary agreement for atmospheric pollutant management	Ministry of Trade, Industry and Energy
2016	Achievement Award (Ministerial Award) for the promotion of AEO	Korea Customs Service
2017	2017 Governor's Award for Sharing Governor of Chungcheongnam-do	Governor of Chungcheongnam-do
2017	Job creation in the private sector at 2017 Public Institution Job Contest	Ministry of Economy and Finance, Presidential Commission on Jobs
2017	Outstanding Institution for Cooperation of the Private and Public Sectors (Ministerial Award)	Ministry of SME and Startups
2017	Best Public Institution for Mutual Growth (Presidential Award)	Ministry of Public Administration and Security
2017	Government Award "Korea Chamber of Commerce Chairman Award" at the 5 th Korea's Respected Companies	Ministry of SME and Startups
2017	2017 Korea Green Climate Award	Ministry of Trade, Industry and Energy
2017	Presidential Award for Proactive administration	Ministry of Personnel Management
2017	Deputy Commissioner's Award for job creation	Presidential Commission on jobs
2017	Commendation for coping with climate change and reduction of greenhouse gas	Ministry of Trade, Industry and Energy
2017	Commendation for open innovation	Ministry of Trade, Industry and Energy
2018	Social Contribution Award Korea Chamber of Commerce and Forbes	Korea Chamber of Commerce and Forbes
2018	Ministerial Award at "Haengbokdeoham Social Contribution Award"	Ministry of Education
2018	National Industrial Grand Award in Employment-Friendly section	The Institute for Industrial Policy Studies
2018	2018 Outstanding Company for Job Creation	Ministry of Employment and Labor
2018	Grand Award at the 12 th National Sustainability Management (Ministerial Awards in Deputy Prime Minister and Minister of Economy and Finance)	Ministry of Economy and Finance
2019	2019 4 th Industrial Revolution Power Korea Contest (Smart Enterprise Leader Award)	Convergence Innovative Economic Forum of National Assembly
2019	Event for win-win growth weeks in 2019 (Ministerial Awards in Excellent company of sharing profits sector)	Ministry of SME and Startups
2019	2019 Bitgaram International Power Technology Expo (Excellent Award in the Power Group of International Invention Patent Contest)	KEPCO
2020	National Industrial Grand Award (Environmental Management, Manufacturing Quality Category Grand Award for 2 consecutive years)	The Institute for Industrial Policy Studies

Area	Associations
Social Contribution	Korea Mecenat Association
Management innovation	Korea Suggestion System Association Korea Management Association
Power-generation Technology	Korea Association of Machinery Industry Korea Electrical Manufacturers Association Korea Engineering Association Korea Hydrogen Industry Association The Korean Society of Mechanical Engineers The Korean Institute of Electrical Engineers Korea Electric Engineers Association Korea Smart Grid Association
4 th Industry	Korean Society for Prognostics & Health Management
Management Economy	The Korean Association of Small Business Studies Seosan Chamber of Commerce & Industry
Construction	Korea Electric Association Korea Project Management Association Korea Society of Civil Engineers Korea Association of Construction Engineering & Management Jeonnam Wind Power Association Korean Institute of Plant Engineering & Construction Korea Society of Project Management Korea National Committee On Large Dams
Project Development	Korea Plant Industries Association
Others	Power Forum Energy Future Forum Korea Energy Foundation Korean Energy Society
Quality Innovation	Future Innovation Research Society Korea Masters Association Korea Standards Association The Korean Society for Quality Management
Safety	Korean Nurses Association Korea Industrial Safety Association Korea Economic Education Association
Disaster	Korea Safety-Zone Certification Institute
Climate and Environment	National Assembly Forum on Climate Change Korea Carbon Capture and Storage Association GHG Emissions Trading Market Council



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