



GS ENERGY SUSTAINABILITY REPORT 2021

TOTAL ENERGY SOLUTION

GS ENERGY



GSE TO ESG

GS Energy is committed to providing a total energy solution based on new growth businesses for the future.

GS Energy has published its first sustainability report this year to transparently share its performance and its activities for sustainability management with various stakeholders. The contents of this report are categorized into environmental (E), social (S) and governance (G) in accordance with ESG classification, and it includes the company's management approach(MA) to material issues identified by business impact and social interest. GS Energy will publish this report every year as a channel for continuous communication with its stakeholders.

The reporting period is from January 1st to December 31st, 2021, while the first half of 2022 is also covered for some material activities and performances. For quantitative performance, data from the past three years, 2019 to 2021, are presented to show trends. This report covers all business sites of GS Energy, both domestic and overseas, while the activities and performances of our power generation and energy subsidiaries (GS Power, Incheon Total Energy) are also included in the Environmental section. Moving forward, we will expand the scope of ESG management in order to disclose the activities and performances of these subsidiaries in the Social and Governance sections as well. Where the reporting period or scope requires particular attention, it is indicated by a note.

This report complies with the Core Option of the GRI Standards, which are the international standards for sustainability reporting, and it satisfies the four accountability principles (inclusivity, materiality, responsiveness, and impact) outlined in the AA1000AP guidelines for verifying reporting. Financial data is prepared on a consolidated basis in accordance with K-IFRS and non-financial data is presented in accordance with our disclosure system for the fiscal year. Notes are included for items requiring particular attention. This report was verified by an independent assurance institute, the Korea Management Registrar, to enhance fairness in the preparation of the report and the credibility of its contents. The assurance statement is included in the Appendix.

If you have any questions or require further information about this report, please contact us as follows. Valuable feedback from our stakeholders is always appreciated.

Sustainability Report, GS Energy | TEL. 02-2005-0966 | E-mail. esg@gsenergy.co.kr

LETTER FROM CEO



Dear stakeholders

I would like to convey my deepest gratitude to you for the unwavering interest and support you have extended to us in our endeavors to achieve growth and development.

GS Energy has continued to grow over the past two years in the face of the lingering COVID-19 pandemic. This is attributable to cost savings and profit maximization through the optimization of LNG supply and facility operation, as well as increased sales resulting

from rising energy costs, such as the price of crude oil and the SMP(system marginal price). Increasing profits and a stable cash flow from our existing energy businesses, which include electric power, district heating, LNG and E&P, serve as the fundamental sources of the new investments we are making with a focus on new growth engines.

2021 is year one of our new portfolio, “Beyond,” which was created to reflect the mainstream trends of future energy: decarbonization, electrification, and digitalization. Through its own investments and collaborations based on open innovation, GS Energy has laid a foundation for new businesses reflecting sustainable growth and changing energy markets under the four themes of green power generation, the hydrogen economy, smart power solutions, and resource circulation.

Uncertainties have grown like never before as the unprecedented pandemic persists, year after year, and ESG management is emerging as the key to a paradigm shift. The emphasis on ESG is expected to spread at a faster pace globally, and disclosing ESG performance has become indispensable for a company's survival. In other words, it is now time to pick up our pace on strategic ESG management to systematically respond to ESG issues, rather than take action intermittently.

GS Energy established four strategies for ESG management in 2021 and is proactively responding to the changing business environment by pushing forward with their implementation. Our four ESG strategies are ‘expanding our green power generation portfolio,’ ‘leading the smart power solution market,’ ‘building an ecosystem for resource circulation’ and ‘leading the reorganization of infrastructure for the clean hydrogen economy,’ and all of them are closely aligned with the Beyond portfolio. Implementing these strategies to conduct and internalize ESG management will drive future growth by reinforcing our digital capabilities and eco-friendly management.

(E) As a responsible energy company that is preemptively responding to climate change, we will make aggressive efforts to achieve carbon neutrality by diversifying our business portfolio.

GS Energy strives to create a happy society for all by ensuring a stable energy supply to foster a clean and comfortable living environment. Now that the energy paradigm is set to change, GS Energy is relentlessly exploring new energy businesses combined with a variety of technologies, including renewables. In 2022, we will further advance the business models of our six new businesses—renewable energy, hydrogen, SMRs(small modular reactors), VPPs(virtual power plants), EV charging and battery recycling—and prioritize the development of relevant growth strategies and action plans. GS Energy is marching forward towards carbon neutrality. We will never settle for the present, but continuously challenge ourselves to discover sustainable sources of energy that will contribute to the future of mankind and the environment.

(S) We will pursue co-prosperity with society by fostering a sustainable work culture and conducting CSR activities to spread a positive influence.

‘Agile, Open & Challenge, One Team’ represent the way we work at GS Energy. This means we pursue small-scale and quick verification, have no fear of change, and collaborate as one team. Furthermore, we have redesigned our work environment. In this excellent new space, which reflects our new and dynamic corporate culture, growth and development, all members of GS Energy, including myself, will strive to create valuable and meaningful outcomes. Going forward, we will spare no effort to enhance the engagement and growth of our employees in order to take innovation and sustainability in our work culture one notch higher. Meanwhile, GS Energy has been a staunch

supporter of local communities, conducting continuous CSR activities such as home improvements for people of national merit and voluntary fundraising for COVID-19 relief. This year, we will be even more aggressive with our CSR activities. We will accelerate our social contributions by establishing a CSR framework and developing customized, representative programs, and thereby spearhead the creation of an inclusive and harmonious future for all.

(G) We will strengthen risk management and maintain sound governance through the transparent and active operation of the Board of Directors.

GS Energy holds regular board meetings and assures the expertise and transparency of the board so that it can play a pivotal role in determining the direction of the company. Moving forward, we will reinforce the Board of Directors as our core decision-making body that sets the course to navigate through these waves of change.

Preemptively managing the negative risks faced by the company is another major pillar of ESG management. For this, we are making a variety of efforts, such as the establishment of the Code of Ethics, specific guidelines on behaviors, and an information protection system. All members of GS Energy will strive to abide by and internalize these regulations so that GS Energy can grow into an honest, clean and upright company.

GS Energy has published its first sustainability report this year and I hope that by sharing our four ESG strategies and action plans, this report will serve as an opportunity to promote transparent communication with our stakeholders. GS Energy will fulfill its social responsibilities to become a company that values talent and which is chosen by customers and trusted by local communities.

Dear stakeholders,

All members of GS Energy will blaze a new path as one team by combining our spirit and capabilities. I would like to ask for your unwavering support and encouragement for our journey forward as a pioneer in society and in the energy market.

Thank you.

CEO Huh Yongsoo

CONTENTS

		ABOUT GS ENERGY		GSE'S ESG STORY		APPENDIX	
GSE to ESG	02	GS Energy Profile	06	ESG Governance	16	Financial Performance	46
Letter from CEO	03	Business Portfolio	08	Key Issues for Sustainability Management	17	GRI Standards Index	47
				Stakeholder Engagement	19	Independent Assurance Statement	49
				Environmental Management	21		
				Preemptive Response to Climate Change	22		
				Reinforced Responsibility for Environment	29		
				Social Responsibility	33		
				Optimized Employee Experience	34		
				Contribution to Local Communities	39		
				Corporate Governance	40		
				Internalized Sound Governance	41		
				Advanced Risk Management	42		

ABOUT GS ENERGY

GS Energy Profile	06
Business Portfolio	08

GS Energy Profile



GS Energy Corporation was established as the energy holding company of GS Group in 2012, and all members of the company have made determined efforts to contribute to the development of the energy industry, which is the mainstay of the national economy, and to lead the energy paradigm shift for the future. Currently, GS Energy is actively engaged in the development of overseas resources, particularly in the Middle East, and is taking the lead in improving the energy self-sufficiency rate and energy security of Korea, which does not have abundant natural resources.

Furthermore, we are striving to create a happy society for all through the stable supply of energy based on eco-friendly natural gas, and thereby foster a clean and convenient living environment. For this, we have constructed an “LNG value chain” encompassing LNG imports, the operation of LNG re-gasification terminals, and an electric power and district heating business fueled by LNG, and are reinforcing our capabilities.

GS Energy will not settle for the present but continuously challenge itself to discover sustainable sources of energy and contribute to the future of mankind and the environment. In particular, we will relentlessly explore new energy businesses along with various new technologies for renewable energy, etc., in order to proactively respond to the changing business environment in the midst of the energy paradigm shift.

GS Energy will also fulfill its social responsibility to become a company that values talent and is chosen by customers and trusted by communities. Furthermore, we will make the utmost effort to turn GS Energy, a representative energy company of Korea, into a global energy company promoting the Korean energy industry in the global marketplace and leading the future.

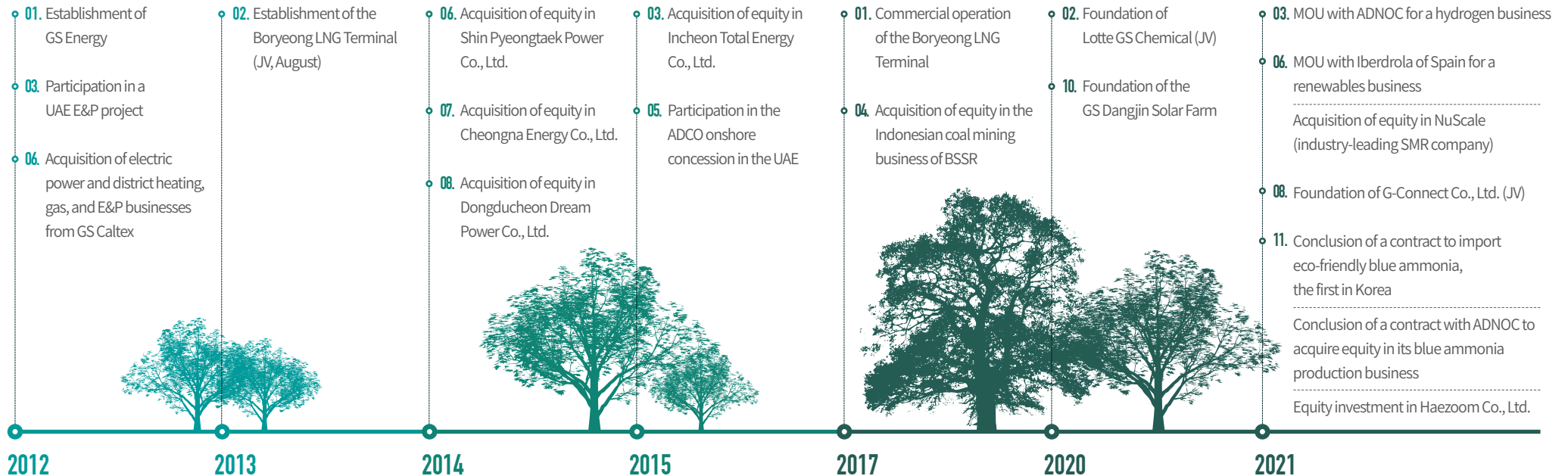
[as of Dec. 31, 2021]

Company Name GS Energy	Affiliate Business Group GS	Foundation Date Jan. 3, 2012	CEO Huh Yongsoo
Address 508 Nonhyeon-ro, Gangnam-gu, Seoul	Industry Holding company	Total Assets KRW 13 trillion	Total Capital KRW 7.7 trillion
Revenue and equity-method income KRW 3.8 trillion	Operating Profit KRW 1.9 trillion	Number of Employees 168	Credit Rating Debtenture AA (Jun. 25, 2021) Commercial paper A1 (Dec. 21, 2021) Corporate credit rating AA (Jun. 25, 2021)
Domestic subsidiaries GS Caltex (50%) GS Power (51%) Boryeong LNG Terminal (50%) Incheon Total Energy (70%) GS Dangjin Solar Farm (100%) G-CONNECT (50%)			



GS Energy Profile

GS Energy History



Membership in Associations/Organizations

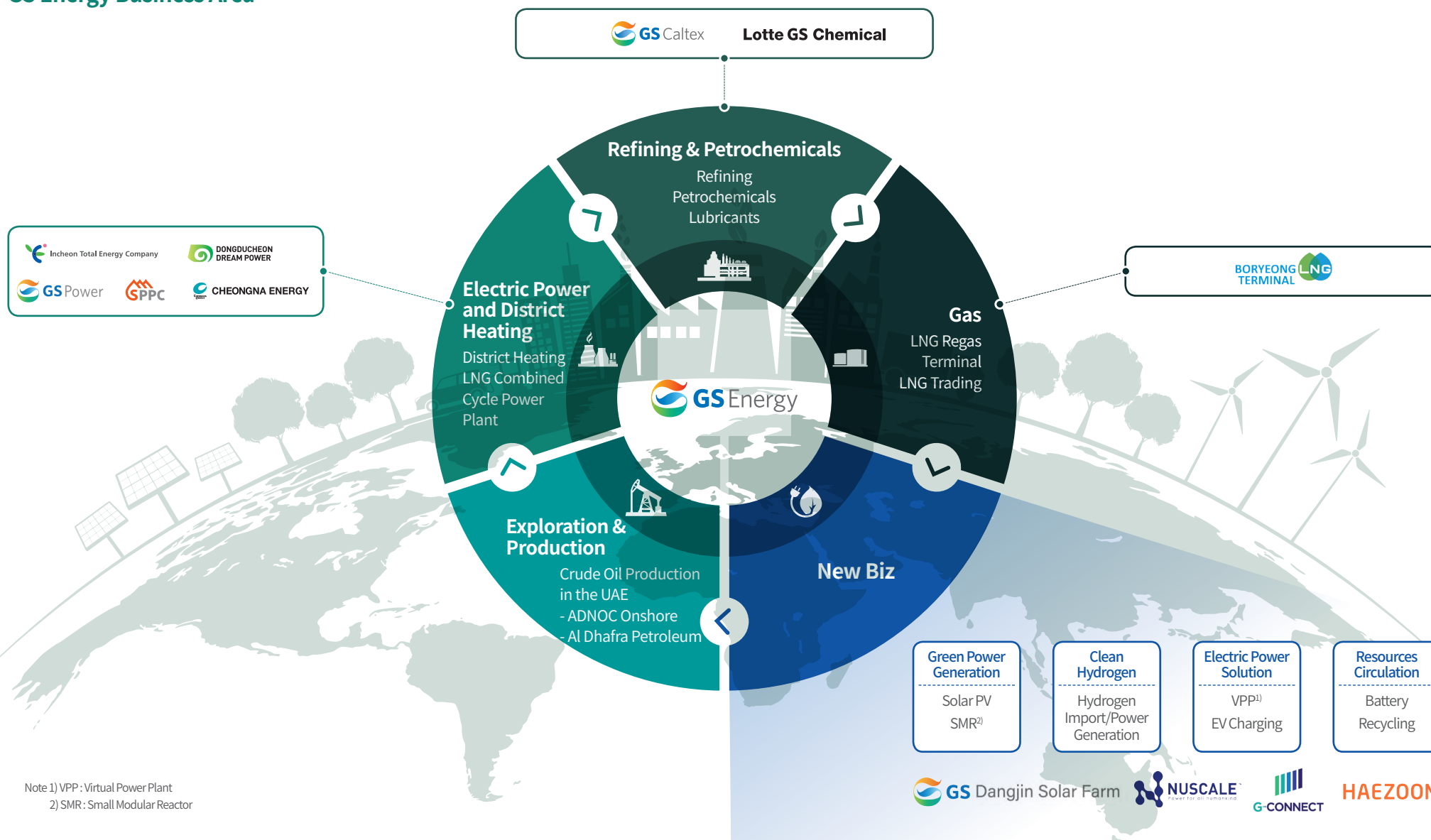
Classification	Organization	Position	Joined in
Energy in general	National Assembly Forum on Climate Change	Co-representative	2014
	Korea Business Council for Sustainable Development(KBCSD)	Steering Committee member	2016
	Energy Future Forum	BOD member	2014
	Energy Alliance	BOD member	2021

Classification	Organization	Position	Joined in
E&P/Gas	Energy and Mineral Resources Development Association	Vice Chairman	2008 (GSC)
	Korea Gas Union	Vice Chairman (2022 WGC Executive Committee member)	2008 (GSC)
	LNG Direct Procurement Association	Chairman	2021
Electric power/district heating	Independent Power Producer Association	Special member	2014

Classification	Organization	Position	Joined in
Hydrogen	H2KOREA	Associate member	2021
	K-CCUS Association	General member	2022
	Clean Ammonia Council	General member	2021
Business community/others	Korea Chamber of Commerce and Industry	General member	2017
	Seoul Forum for International Affairs	Regular member	2019

Business Portfolio

GS Energy Business Area

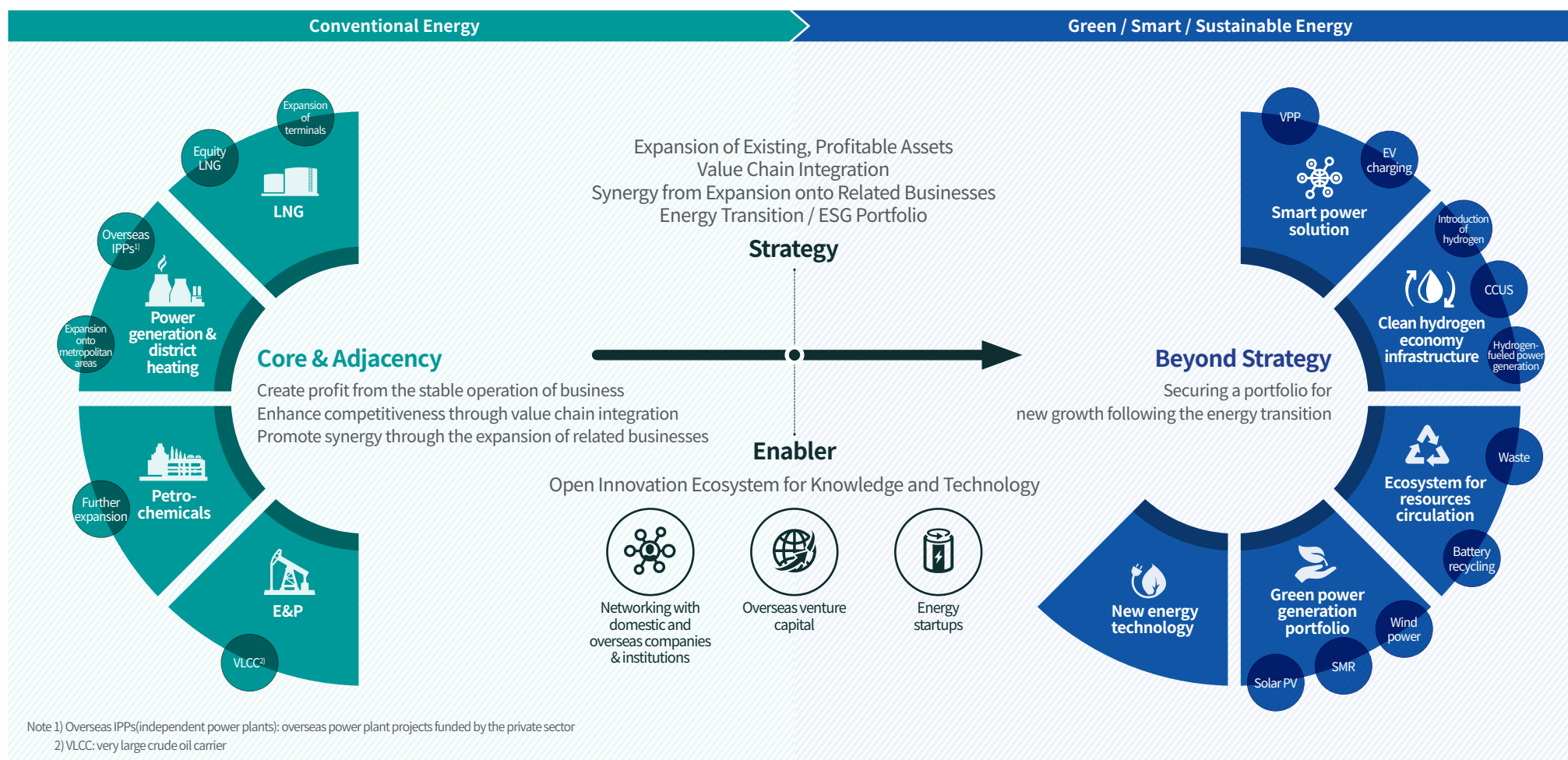


Business Portfolio

Mid- to Long-term Strategic Direction

GS Energy has established a mid- to long-term strategic roadmap for sustainable growth, and is carrying out tasks focused on the continuous innovation of its business portfolio, the reinforcement of its human capabilities, the promotion of ESG management, and digital transformation. In particular, we have implemented four ESG strategies in earnest since 2021.

These four ESG management strategies are expanding our green power generation portfolio, leading the smart power solution market, establishing an ecosystem for resource circulation, and leading the reorganization of infrastructure for the clean hydrogen economy. We aim to achieve future growth under these management strategies by “reinforcing our digital competencies and promoting eco-friendly management.”



Business Portfolio

Electric Power & District Heating

GS Energy is the exclusive supplier of electricity and heat to the Anyang and Bucheon new towns from the nearby combined heat and power plants of GS Power. We have also built a large-scale network that supplies heat to 700,000 households, mainly in the southwestern part of the metropolitan area, by acquiring shares in Cheongna Energy and Incheon Total Energy. With these subsidiaries, we have achieved large-scale reductions in energy use and greenhouse gas emissions by improving energy efficiency, diversified sources of electric power supply by securing distributed energy resources, and maximized the effectiveness of our district heating business to ensure convenient energy supply to the residential and industrial sectors. Furthermore, GS Energy has expanded its electric power business by acquiring shares in Shin Pyeongtaek Power and Dongducheon Dream Power, which own LNG-fueled combined-cycle power plants. We are also exploring various new businesses in order to respond flexibly to the electric power market, which is undergoing rapid change as businesses and governments take measures to cope with climate change. Moving forward, we will further expand our power business and build a foundation for stable profits by continuously unearthing opportunities both at home and abroad, including in Southeast Asia.



GS Power was selected as the successful bidder in competitive bidding for the Anyang/Bucheon CHP(combined heat and power) plants and district heating facilities, which was conducted by the government in its sale of the power generation business of the Korea Electric Power Corporation and the privatization of Korea District Heating Corporation. The company signed an asset transfer contract on June 22, 2000, and started operation of the facilities on September 1 of the same year. GS Power produces electricity and heat at its natural gas-fueled combined-cycle power plant, which has a total capacity of 1,430 MW. It sells electricity to the Korea Power Exchange and supplies heat produced at its power plants and incinerators to over 380,000 households in Anyang and Bucheon as a district cooling/heating service.



as of 2021 (Unit: KRW million)

Revenue	916,686
Operating income	178,231
Assets	2,486,695
Contact Information	100, Burim-ro, Dongan-gu, Anyang, Gyeonggi-do 031-420-2590 www.gspower.co.kr



Incheon Total Energy Company

Incheon Total Energy was established in June 2004 for the purpose of smoothly supplying district heating and cooling to Incheon and contributing to national energy conservation. The company has made continuous efforts to supply convenient and safe district heating and cooling and to reduce the cost of heat production. Furthermore, we are striving to provide high-quality energy services to more citizens by expanding our supply areas beyond Songdo International City to include the old downtown of Incheon. Moving forward, Incheon Total Energy will fulfill its corporate social responsibility by carrying out aggressive CSR activities and promoting shared growth with partner companies, and thus create a happier society for all stakeholders.



as of 2021 (Unit: KRW million)

Revenue	179,917
Operating income	31,178
Assets	485,641
Contact Information	51-37, Academy-ro, Yeonsu-gu, Incheon 1577-1079 www.e-inteco.co.kr

Share of economic value creation



Electric power & district heating

Consolidated revenue and equity-method income KRW 968.6 billion

25.7%

Electric Power

A combined heat and power plant in a pleasant environment | A CHP plant produces both electric power and heat. It is a comprehensive plant system designed to maximize energy efficiency by flexibly supplying electricity and heat generated from a single heat source to users as needed. GS Power sells electricity produced at its LNG-fueled CHP plants (Anyang 500 MW, Bucheon 450 MW) to the grid, providing a stable source of power supply to the metropolitan area.

District Heating and Cooling

Convenient and economical district heating and cooling | The district heating and cooling business provides 24/7 heating and cooling services across a district by using heat economically produced at concentrated, large-scale facilities such as CHP plants, instead of having individual buildings run their own cooling/heating facilities. In addition to the heat generated in the cogeneration process, GS Power utilizes waste heat from incinerators to offer eco-friendly and stable district heating and cooling services to approximately 380,000 households in the metropolitan area.

Renewable Energy

Solar PVs | GS Power operates solar power generation facilities with a total capacity of 10,000 kW at its Anyang/Bucheon CHP plants, GS Retail Logistics Center, etc.
Fuel Cells | Fuel cells convert the chemical energy of hydrogen and oxygen into electricity and dramatically reduce carbon emissions.
Small-scale hydro power and wind power | GS Power operates a small hydro power plant at its water purification plant in Gwangju and a wind power plant at the Gyeongju Industrial Complex.
ESSs(Energy Storage Systems) | GS Power operates ESSs at its CHP plants to reduce peak load.

Energy Efficiency

Our energy efficiency business provides optimal energy saving solutions for recovering unutilized energy and improving the energy efficiency of facilities that consume energy. GS Power's optimal energy efficiency solutions for facilities and processes draw on its experience in the design, construction and follow-up management of user facilities. Through this, we contribute to energy savings and greenhouse gas reductions at user facilities, such as Incheon Total Energy, an incinerator in Anyang, and the Banwol Dyeing Complex.

District Heating

Our district heating business supplies economically produced heat (hot water) from concentrated large-scale heat sources to a district through buried heat pipelines, which means that individual buildings in the district, such as apartments, houses, shopping malls, and offices, don't have to operate their own facilities.

District Cooling

Our district cooling business converts economically produced hot water from large-scale heat production facilities into cold water at conversion facilities and provides a cooling service to a district. This advanced cooling system helps to reduce peak power load in summer by using alternative energy such as the residual heat of power plants. Furthermore, as water is used as the refrigerant instead of greenhouse gases that cause global warming, it contributes to improving air quality by protecting the ozone layer.

Business Portfolio

Electric Power and District Heating



Shin Pyeongtaek Power was jointly established by GS Energy, Korea Western Power and KB Kookmin Bank in 2014. It has been operating a 950-MW LNG-fueled combined-cycle power plant since October 2019 and supplies electric power to the metropolitan area, including Pyeongtaek and Hwaseong.

as of 2021 (Unit: KRW million)

Revenue	653,117	Operating income	102,847	Assets	1,028,052
Contact Information	271 Gyeonggi-daero, Pyeongtaek, Gyeonggi-do 031-612-2900 www.sppc.co.kr				



GS Energy acquired shares in Dongducheon Dream Power in 2014. Dongducheon Dream Power operates an LNG-fueled combined-cycle power plant with a total capacity of 1,716 MW (two units of 858 MW each) located in Gwangam-dong, Dongducheon, Gyeonggi-do. This power plant started commercial operation in March 2015 and has since been a reliable power supplier to the northern part of the metropolitan area.

as of 2021 (Unit: KRW million)

Revenue	750,139	Operating income	31,202	Assets	1,398,422
Contact Information	110 Soemok-gil, Dongducheon, Gyeonggi-do 031-8082-3000 www.iddp.co.kr				



Established in 2005, Cheongna Energy is jointly owned by GS Energy (49.9%) and Korea Western Power (50.1%) and supplies electric power to 139,000 households across Incheon and Gimpo by utilizing waste heat from processes, fuel cells and unused heat from incinerators.

as of 2021 (Unit: KRW million)

Revenue	77,640	Operating income	22,701	Assets	357,247
Contact Information	676 Wondang-daero, Seo-gu, Incheon 032-565-2800 www.e-cheongna.co.kr				



New Business

HAEZOOM

GS Energy acquired shares (36.51%) in Haezoom by making a strategic investment for technical and business cooperation in 2021. AS an IT specialized renewable energy company based on satellite data and artificial intelligence(AI), Haezoom is accelerating technology development for energy platforms and VPPs(virtual power plants).

as of 2021 (Unit: KRW million)

Revenue	16,914
Operating income	(34)
Assets	24,066
Contact Information	12 Beopwon-ro, Songpa-gu, Seoul 02-889-9941 www.haezoom.com



G-Connect is an EV(electric vehicle) charging service provider jointly established by GS Energy (50%) and GNTel (50%) in 2021. As of the end of 2021, G-Connect was operating about 8,500 EV chargers. The company is seeking to expand its charging business, which has become essential as demand for EV is expected to continue rising under government policies to promote green vehicles.

as of 2021 (Unit: KRW million)

Revenue	3,860
Operating income	(260)
Assets	12,990
Contact Information	278 Beotkot-ro, Geumcheon-gu, Seoul 1544-4279



Business Portfolio

Refining & Petrochemicals

GS Energy has secured global competitiveness in the oil refining, petrochemical and lubricant businesses through its subsidiary, GS Caltex, which is a world-class refining and petrochemical company. Furthermore, the company established Lotte GS Chemical as a joint venture with Lotte Chemical, adding to its competitiveness in the oil refining and petrochemical businesses. Drawing on its accumulated experience and capabilities, GS Energy is constantly exploring business opportunities in the refining and petrochemical industry both at home and abroad and will continue to generate profits and enhance competitiveness.



Refining

GS Caltex operates crude refining facilities with a capacity of 800,000 bpd (barrels per day) and a HOU (heavy oil upgrading) facility with a capacity of 274,000 barrels per day, the largest in Korea. GS Caltex generates 71% of its revenue from exports.

Petrochemicals

GS Caltex has expanded its production capacity and competitiveness to a world-class level through continuous facility investments, and has an annual production capacity of 2.8 million tons of aromatics, including a 1.35 million ton para-xylene production plant. Its annual polypropylene production capacity is 180,000 tons, and it has also begun production of composite resins (composite PP). GS Caltex has established overseas subsidiaries to produce composite resins in China, the Czech Republic and Mexico, and aims to grow into a global composite resin manufacturer.

Base Oil and Lubricants

GS Caltex has expanded its production capacity for base oil to 26,000 barrels per day, and is exporting more than 70% of total production. Furthermore, it produces 9,000 barrels of lubricant products and 9,000 tons of grease products per day, and has been recognized for its excellent products and technologies, ranking first in market share and sales volume in the domestic market for finished lubricants. Based on its competitiveness in the domestic market, GS Caltex has been making forays into overseas lubricant markets in China, Russia, and elsewhere, and has established subsidiaries in India, China and Russia.



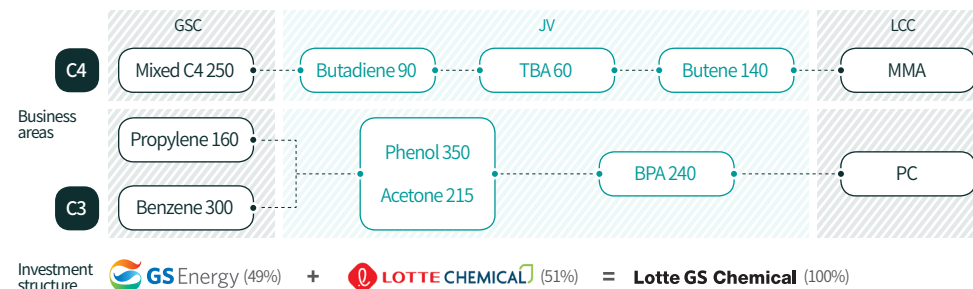
as of 2021 (Unit: KRW million)

Revenue	34,538,430
Operating Income	2,018,852
Assets	23,582,457
Contact Information	508 Nonhyeon-ro, Gangnam-gu, Seoul 1544-5151 www.gscalex.com

Lotte GS Chemical

Lotte GS Chemical was established on February 12, 2020, as a joint venture between GS Energy and Lotte Chemical. It is currently constructing a plant to produce C4 fraction in the Yeosu Industrial Complex and commercial operation is slated for 2022. Design work is underway for the construction of facilities to produce phenol, acetone, and BPA, and commercial operation is scheduled for 2024. Lotte GS Chemical has an annual production capacity of 130k tons for butadiene, a raw material for high value-added synthetic rubber, 240k tons for BPA, a raw material for high-transparency electronic materials and renewable energy production, and 350k tons for phenol. Lotte GS Chemical will be supplied with feedstock, such as propylene, benzene, and C4 fraction, from GS Caltex, and will supply its products, such as butadiene, TBA, phenol, acetone, and BPA, to customers, including Lotte Chemical. As such, the company is engaged in a collaborative business, drawing on the feedstock of GS Caltex's MFC and the capabilities (technology/land/demand) of Lotte Chemical.

Overview



History July 2019: Signed a contract to establish a J/V ⇒ Feb. 2020: Established Lotte GS Chemical ⇒ 1H, 2022: C4 fraction plant to be completed ⇒ 2H, 2023: Phenol/BPA plant to be completed

Share of economic value creation



15.6%

Consolidated revenue and equity-method income KRW 589 billion



as of 2021 (Unit: KRW million)

Revenue	-
Operating Income	(1,756)
Assets	330,225

*Loss of operating profit loss due to preparation for commercial production

Contact Information	69 Baekjegobun-ro, Songpa-gu, Seoul 02-440-0114 www.lottegchem.net
---------------------	--

Business Portfolio

Gas

GS Energy has built a foundation for its LNG business by establishing a trading corporation for direct LNG imports and operating an LNG regasification terminal. We currently supply natural gas for self-consumption to affiliated power plants through the Boryeong LNG Terminal, and we plan to expand the supply of natural gas to ensure stability and economics and to accommodate demand for direct natural gas imports. Moving forward, we will lay a solid foundation for our growth into a global enterprise by building an LNG value chain spanning both the downstream and upstream sectors and expanding our business model into overseas markets.

Share of economic value creation



Consolidated revenue and equity-method income **695** billion

18.4%

GS Energy Trading Singapore Pte. Ltd

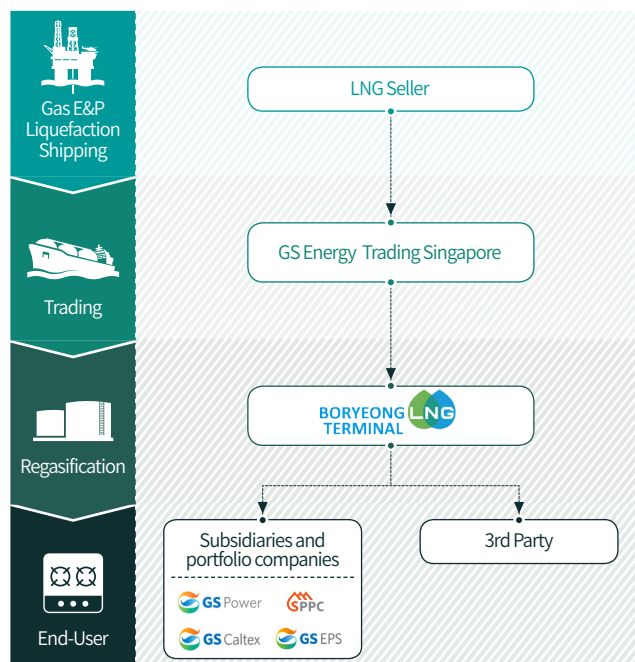
GSETS(GS Energy Trading Singapore) is a trading subsidiary in Singapore established in February 2014 for the purpose of securing LNG at competitive prices and supplying it to GS Group's end users. GSETS has secured a supply volume of over 1 million tons under long-term contracts as well as a competitive spot volume to accommodate the market environment, and supplies LNG through the Boryeong LNG Terminal to Korea. Furthermore, it is striving to expand its trading business by concluding long-term LNG distribution contracts with third-party customers in Korea. Located in Singapore, an international LNG hub, GSETS will monitor the market environment, including global LNG supply and demand, and strengthen trading capabilities to contribute to stable energy supply.

as of 2021 (Unit: KRW million)

Revenue	900,449	Operating Income	47,562	Assets	114,429
---------	---------	------------------	--------	--------	---------



The LNG Value Chain of GS Energy



Work on the Boryeong LNG Terminal was started in February 2013 under a joint venture between GS Energy (50%) and SK E&S (50%) with the goal of constructing and operating an LNG regasification terminal to supply natural gas for self-consumption. It started commercial operation in January 2017 with a total storage capacity of 600,000 kℓ. As of February 2022, its storage capacity had increased to 1.2 million kℓ and it was supplying about 6 million tons of natural gas for power generation and industries every year. Moving forward, the Boryeong LNG Terminal aims to gradually expand supply to satisfy the demand for direct natural gas imports for self-consumption, and to make continuous efforts to ensure a stable energy supply for the country and reduce energy costs.

as of 2021 (Unit: KRW million)

Revenue	193,772	Operating Income	68,041	Assets	1,677,414
---------	---------	------------------	--------	--------	-----------

Contact Information	333 Ocheonhaean-ro, Ocheon-myeon, Boryeong-si, Chungcheongnam-do 041-939-9955 www.lng-tml.com
---------------------	--



Phase 1 commercial operation: Jan. 1, 2017

- LNG Tank: Tanks #1~3 (200,000 kℓ)
- LPG Tank: Tank #1 (77,000 kℓ)
- Re-gasification and transmission facility: 490 ton/h
- Jetty #1 (180,000 kℓ)

Phase 2-1 commercial operation: July 1, 2019

- LNG Tank: Tank #4 added
- Re-gasification and transmission facility : 290 ton/h added (780 ton/h in total)

Phase 2-2 commercial operation: Oct. 2, 2021

- LNG Tank: Tanks #5~6 added
- Re-gasification and transmission facility: 260 ton/h (1,040 ton/h in total)
- Jetty #2 added (2 berths in total)

Business Portfolio

Exploration & Production

In March 2012, GS Energy became the first Korean company to participate in the development of a crude oil field in the UAE, which had previously been led mainly by global oil major companies, and thus laid the groundwork for advancing into the Middle East. In May 2015, the company took part in the UAE's giant production fields, securing daily crude oil production about 50,000 barrels per day, or 800 million barrels of equity crude oil production¹⁾ over 40 years, which is the largest single E&P business in the history of Korea. GS Energy's daily oil production in Abu Dhabi accounts for about 1.5%²⁾ of the daily oil consumption of Korea, and the produced crude oil is all sold to major overseas companies. GS Energy will continue to grow E&P into a key business based on its global network and strategic partnerships, and will thereby help secure energy resources for the nation.

UAE Al Dhafra Petroleum

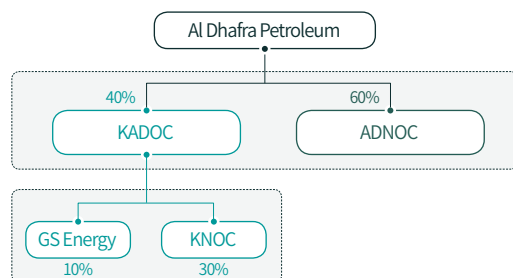
UAE Al Dhafra Petroleum started commercial production in June 2019. Our production volume is 4,000 barrels of crude oil per day based on our shareholding ratio of 10%. UAE Al Dhafra Petroleum continues to explore ways of increasing production by discovering and developing additional structures within the concession area. GS Energy is taking part in UAE Al Dhafra Petroleum through KADOC Ltd.³⁾, a joint venture with the Korea National Oil Corporation.

Overview

- Participation interest: 10%
- Concession period: 2012-2042 (30 years)
- Reserves: 213 million barrels (equity reserves: 21.3 million barrels)
- Daily production: about 40,000 barrels/day (equity daily production: about 4,000 barrels/day)

Investment structure

KADOC				as of 2021 (Unit: KRW million)	
Revenue	390,779	Operating Income	276,783	Assets	751,825



UAE ADNOC Onshore

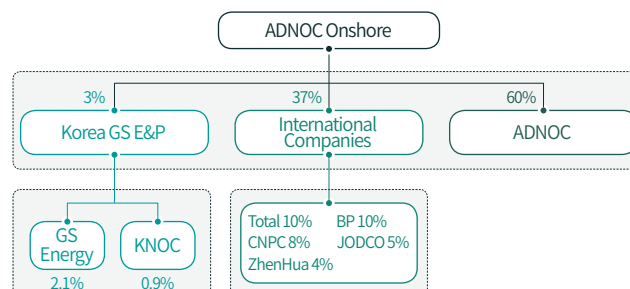
In May 2015, GS Energy achieved the feat of participating in the ADNOC Onshore Concession, which has been led by global oil major companies for the past 75 years. The whole concession produces about 1.8 million barrels of oil per day, and our equity production is 37,800 barrels of oil per day based on our shareholding ratio of 2.1%. We are participating in the ADNOC Onshore Concession through Korea GS E&P Pte. Ltd., a joint venture with the Korea National Oil Corporation.

Overview

- Participation interest: 2.1%
- Concession period: 2015-2054 (40 years)
- Reserves: 22.3 billion barrels (equity reserves: about 470 million barrels)
- Daily production: 1.8 million barrels/day (equity daily production: about 37,800 barrels/day)

Investment structure

Korea GS E&P Pte. Ltd.				as of 2021 (Unit: KRW million)	
Revenue	1,467,246	Operating Income	1,012,740	Assets	1,896,976



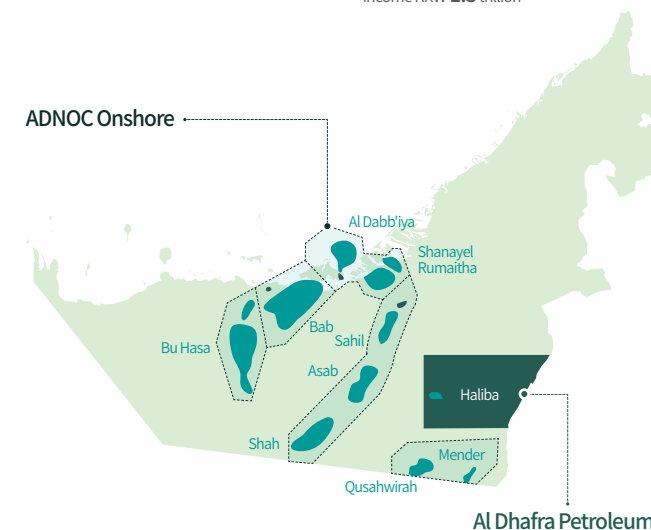
Share of economic value creation



E&P

40.3%

Consolidated revenue and equity-method income KRW 1.5 trillion



Haliba crude oil drilling site in Al Dhafra Petroleum Block

Note 1) As of the year of participation

2) Domestic daily oil consumption: 2.8 million barrels (source: Petronet), Al Dhafra 4,000 barrels/day, ADNOC Onshore 37,800 barrels/day

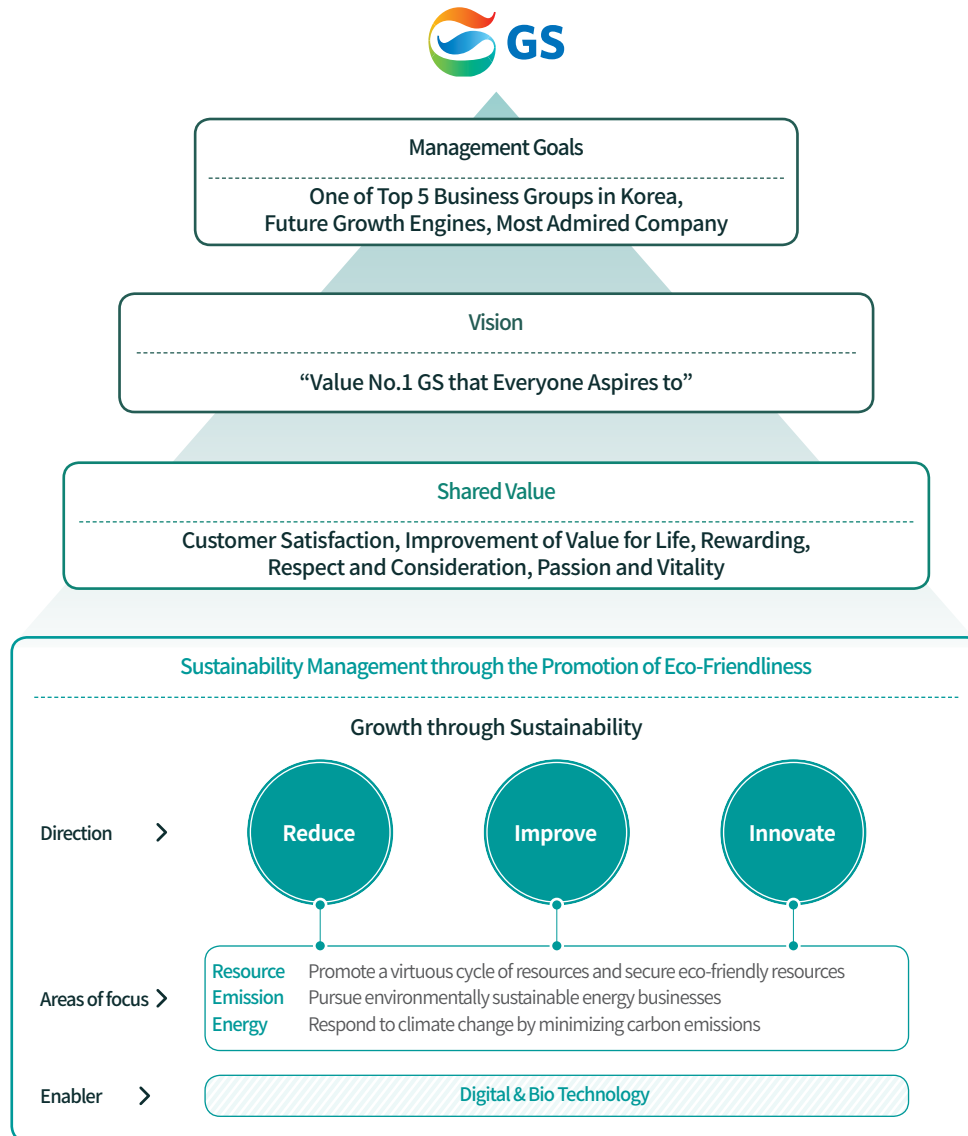
3) Korea Abu Dhabi Oil Corporation Ltd.

GSE'S ESG STORY

ESG Governance	16
Key Issues for Sustainability Management	17
Stakeholder Engagement	19
Environmental Management	21
Preemptive Response to Climate Change	22
Reinforced Responsibility for Environment	29
Social Responsibility	33
Optimized Employee Experience	34
Contribution to Local Communities	39
Corporate Governance	40
Internalized Sound Governance	41
Advanced Risk Management	42

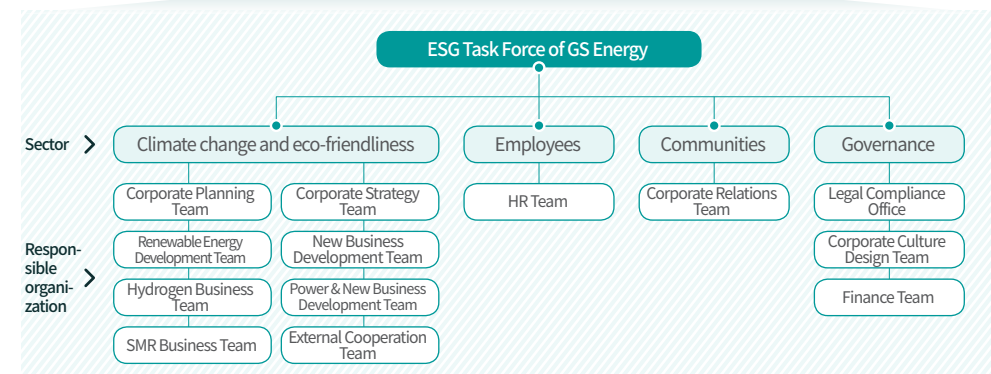
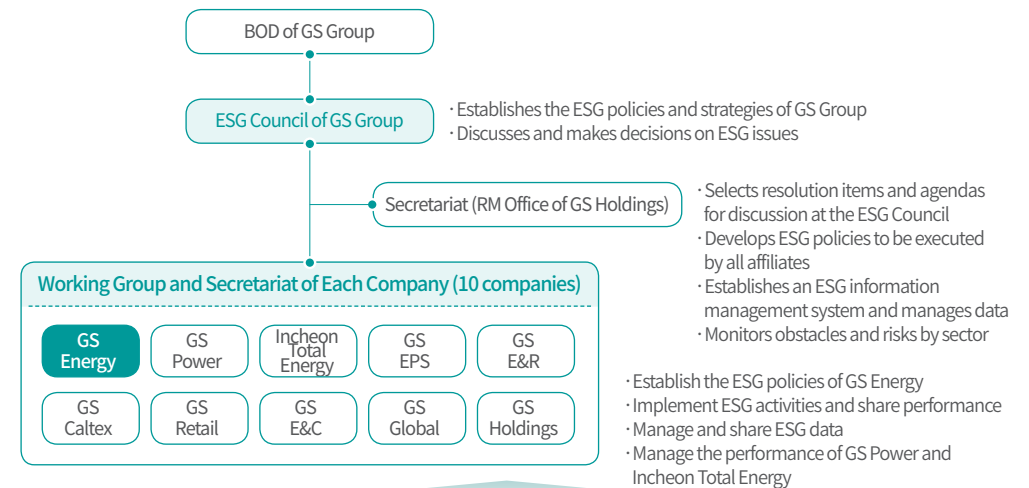
ESG Governance

Strategic Structure of GS Group



ESG Organization

GS Group conducted an ESG diagnosis at the group level and came up with various ESG tasks to pursue in 2021 with the goal of responding to demands for ESG management from across society. Furthermore, in February 2022, the previous Eco-friendly Business Council was reorganized into the ESG Council to make decisions and implement ESG tasks with greater efficiency. GS Energy participates in the ESG Council of GS Group and will report on ESG issues in the power generation and energy industries, including those of its main subsidiaries (GS Power, Incheon Total Energy). We have also organized an ESG Task Force to expedite actions at the working level and support the activities of the ESG Council and the ESG management of our main subsidiaries.



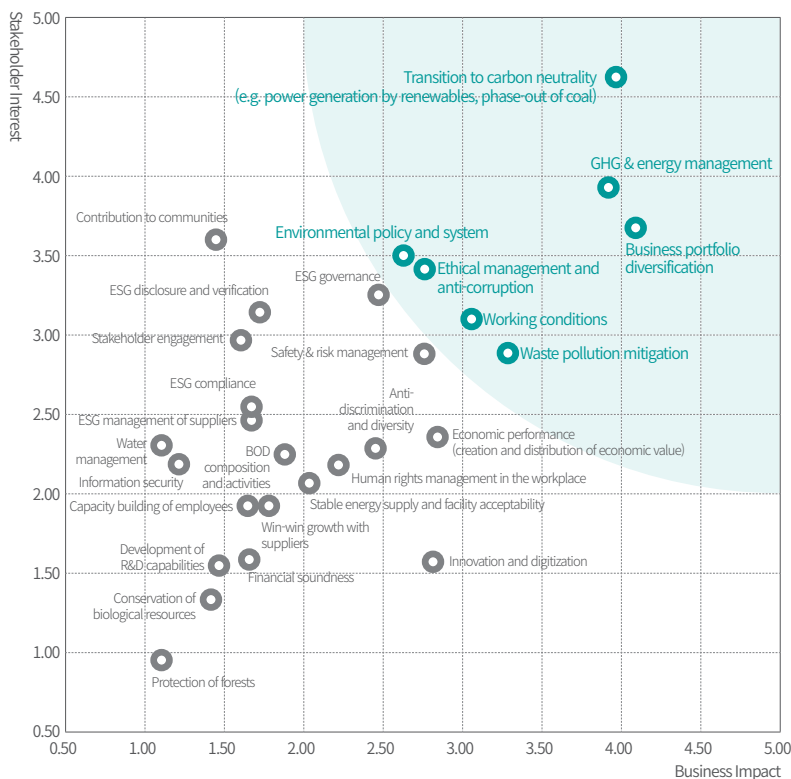
Key Issues of Sustainability Management

Materiality Assessment

GS Energy conducted a materiality assessment to identify and select key issues which should be managed with priority in the course of sustainability management. For this, we identified stakeholder interests through media research and benchmarking, and conducted a comprehensive review of business impacts through surveys and expert evaluations. In particular, given the importance of the UN SDGs(Sustainable Development Goals), important issues aligned with SDGs were also identified.



Materiality Assessment Results



Selection of Reporting Topics

Reporting topics were selected with a view to effective reporting on the status of sustainability management at GS Energy. Issues were grouped by relevance and other important issues were added, and thus consistency was secured for future reporting.

Pillars	Core Agenda	Reporting Issues	Priority	Key Issue	Impact			GRI Standards
					Cost	Revenue	Reputation	
Environmental Management	Preemptive response to climate change	Transition to carbon neutrality (e.g. power generation by renewables, phase-out of coal)	1	✓	**	**		201. Economic performance (201-2)
		GHG management	2	✓	***	**		302. Energy (302-1,2,4,5)
		Business portfolio diversification	3	✓		***		305. Emissions (305-1,25)
	Reinforced responsibility for the environment	Environmental policy and system	7	✓			***	303. Water and wastewater (303-1,2,3,5)
		Mitigation of waste pollution	6	✓		**	***	305. Emissions (305-7)
		Water management	25		**	**	***	306. Waste (306-3,4,5)
Social Responsibility	Optimized employee experience	Working conditions	5	✓		**	**	401. Employment (401-1,3)
		Anti-discrimination and diversity	11			**	**	404. Training and education (404-2,3)
		Capacity building of employees	22		**	**		405. Diversity and equal opportunity (405-1,2)
		Human rights management in the workplace	14		**		***	406. Non-discrimination (406-1)
	Contribution to community development	Contribution to communities	13		**		***	412. Human rights assessment (412-1,2)
								203. Indirect economic effects (203-1)
Corporate Governance	Internalization of sound governance	BOD composition and activities	18			**	***	413. Community (413-1)
	Advancement of risk management	Ethical management and anti-corruption	4	✓			***	102. Public disclosure (102-22,23,24)
		Financial soundness	24		**	**	**	102. Public disclosure (102-22,23,24)
		Information security	23		**		***	205. Anti-corruption 205-23)

418. Protection of customer information (418-1)

419. Compliance (419-1)

Key Issues of Sustainability Management

Management Approach

Environmental Management



Preemptive Response to Climate Change

As climate change is drawing greater attention worldwide, responding to climate change has become a must for companies, not an option. GS Energy is well aware of the impact climate change is having on its business operations, and with a sense of responsibility as the leader of the energy industry, it has embarked on new businesses related to greenhouse gas reductions to achieve carbon neutrality by 2050.

Major Activities in 2021

- Expanded the new business portfolio by establishing the "Beyond Strategy"
- Signed a contract to import eco-friendly blue ammonia, the first in Korea

Key Achievements in 2021

Greenhouse gas emissions

GS Power **2,198,431**tCO₂eq
Incheon Total Energy **382,327**tCO₂eq



Reinforcement of Environmental Responsibility

Companies should measure and manage environmental impacts arising from their business operations in order to achieve sustainable growth. As the holding company of GS Power and Incheon Total Energy, GS Energy has established policies to manage major the environmental issues related to water resources, waste, and pollutants of its energy and power generation businesses, and monitors its subsidiaries' activities to protect the environment.

Major Activities in 2021

- [Group] Established an environmental management policy
- Set measures to implement environmental management
- Began environmental impact management for major subsidiaries as per the expanded scope of ESG management

Key Achievements in 2021

Environmental accidents/
legal violations

GS Power **NONE**
Incheon Total Energy **NONE**

Social Responsibility



Optimization of the Employee Experience

Employees are the stakeholders who create the organizational culture, and sustainability management of a company begins with them. Recently, human rights management has been drawing greater attention across society along with the enactment of laws and regulations on human rights. In the course of managing its HR systems, welfare programs and communication channels for employees, GS Energy strives to go beyond simply pursuing business profits and enhance happiness of its employees.

Major Activities in 2021

- [Group] Established the Charter of Human Rights
- Conducted the Work Space Redesign Project
- Unified the job titles of employees and introduced absolute performance evaluations based on year-round/360 degree evaluations and observations

Key Achievements in 2021

Employee welfare

KRW **1.7**billion



Contributions to Community Development

A company is a member of its local community and has impacts, big and small, on the community. Hence, it is important that companies pay close attention and strive to address issues facing the community. GS Energy seeks to promote co-prosperity with local communities by carrying out CSR activities that reflect the characteristics of its business.

Major Activities in 2021

- Established the CSR Vision
- Selected key areas for social contributions

Key Achievements in 2021

Total amount of donations

KRW **173**million

Corporate Governance



Internalization of Sound Governance

Sound corporate governance forms the foundation for a company to fulfill its environmental and social responsibilities as well as generate economic outcomes. For a company to implement sustainability management, there must be a mechanism to actively reflect the opinions of various stakeholders in business management. GS Energy strives to internalize sound corporate governance in compliance with relevant laws and regulations.

Major Activities in 2021

- [Group] Established policies to ensure the independence and diversity of the BOD

Key Achievements in 2021

BOD agenda **50** items

BOD attendance rate **98.89%**



Risk Management Advancement

The essence of ESG management is the systematic management of the various risks a company may face. Recently, companies are being required to manage environmental and social risks in addition to traditional financial risks. GS Energy is advancing its risk management by reinforcing the responsibility of its employees to make ethical decisions and protect customer information.

Major Activities in 2021

- Reviewed the risks of key subsidiaries related to compliance management and information protection as per the expanded scope of ESG management

Key Achievements in 2021

Violations of ethical management **NONE**

Data breaches **NONE**



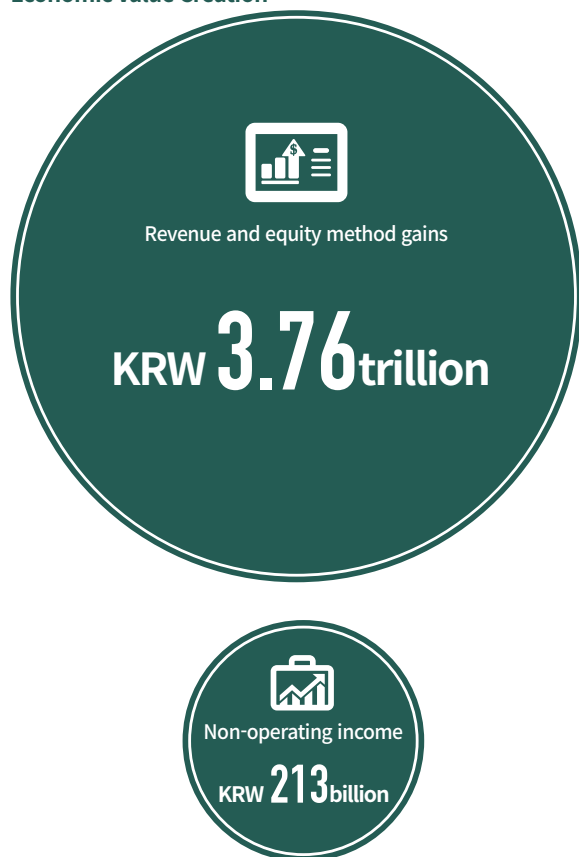
Stakeholder Engagement

Promotion of Stakeholder Value

GS Energy is leading the power generation and energy industries through the operation of its subsidiaries and companies it has invested in, and is continuously creating economic value. In 2021, the Company generated KRW 3.9 trillion in consolidated financial performance.

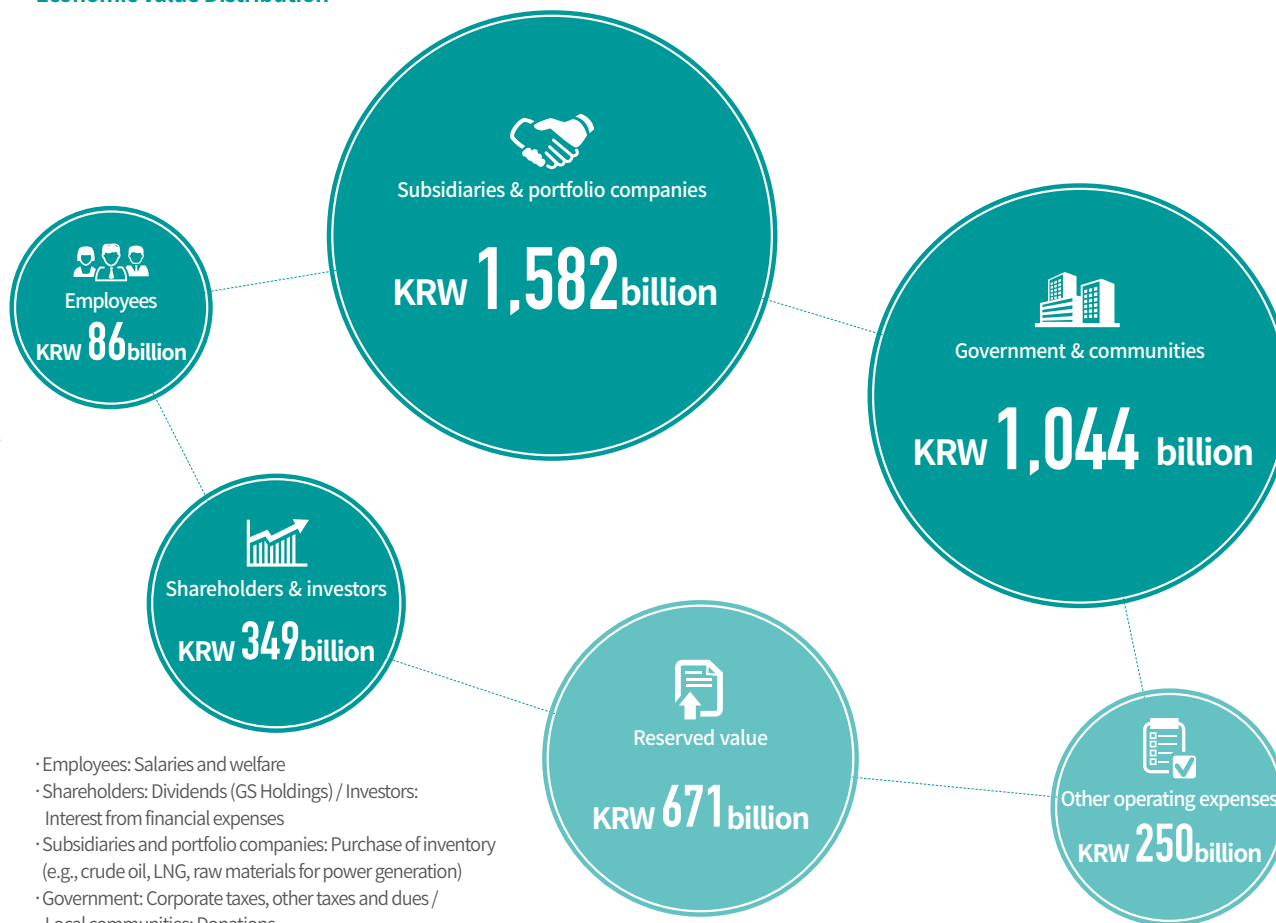
The economic value we create is distributed among various stakeholders, directly or indirectly, and as such GS Energy is striving to fulfill the essence of sustainable management by enhancing stakeholder value.

Economic Value Creation



- Revenue and equity method gains: Revenue from external customers
- Non-operating income: Other income, financial income

Economic Value Distribution



- Employees: Salaries and welfare
- Shareholders: Dividends (GS Holdings) / Investors: Interest from financial expenses
- Subsidiaries and portfolio companies: Purchase of inventory (e.g., crude oil, LNG, raw materials for power generation)
- Government: Corporate taxes, other taxes and dues / Local communities: Donations
- Other operating expenses: Depreciation, financial expenses, and other expenses
- Reserved value: Non-controlling interests (KNOC, Incheon Metropolitan City)

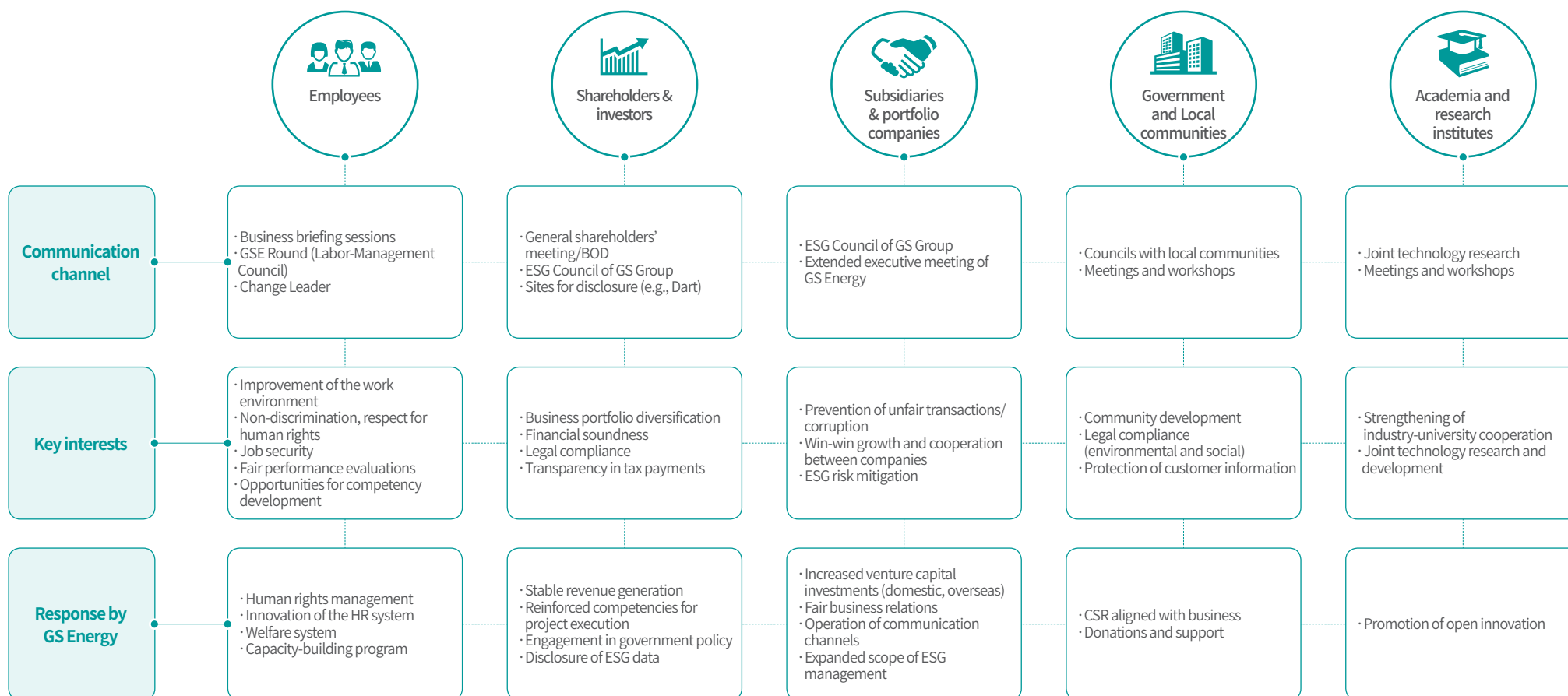
Stakeholder Engagement

Stakeholder Communication

GSEnergy communicates with its internal and external stakeholders, such as shareholders, customers, employees, and local communities, to collect various opinions and reflect them in its management activities with the goal of sustainable development. For this, we identify various stakeholders associated with our business activities,

services and relationships who share economic, environmental, and social impacts with us. Stakeholders are classified into shareholders, customers, employees, and local communities according to internal standards, and we identify their expectations through our continuous and reliable communication channels.

Stakeholders and Key Communication Channels



ENVIRONMENTAL MANAGEMENT

Preemptive Response to Climate Change

Opportunities and Risks related to Climate Change	22
Beyond Strategy for Net-Zero	23
ESG Enabler	26
Response to Climate Change Risks	27

Reinforced Environmental Responsibility

Environmental Management System	29
Environmental Management Policy	29
Environmental Impact Management of Subsidiaries	30

Preemptive Response to Climate Change

Opportunities and Risks Related to Climate Change

GS Energy recognizes the close relationship between the power generation & energy business and climate change, and is continuously analyzing opportunities and risks related to climate change. As to opportunities, we aim to exploit new markets in four key areas in preparation for the era of carbon neutrality starting in 2050: green power portfolios, infrastructure for the clean hydrogen economy, smart electric power solutions, and ecosystems for resources circulation.

Opportunities Related to Climate Change

Item	Impact
Energy source	<ul style="list-style-type: none"> Power generation using low-carbon energy Utilization of policy incentives for renewable energy Active participation in the carbon credit market
Products and Services	<ul style="list-style-type: none"> Expansion of low-carbon energy supply and power generation Establishment of business investment strategies with consideration for the impacts of climate change Diversification of business portfolios related to climate change responses
Resource Efficiency	<ul style="list-style-type: none"> Improvement of energy efficiency in buildings and means of transportation Recycling and reuse of resources, reduction of water consumption
Markets	<ul style="list-style-type: none"> Increased investment in new venture capital related to climate change Use of incentives by the public sector Financing that takes climate risks into consideration
Resilience	<ul style="list-style-type: none"> Active participation in renewable energy programs and introduction of energy efficiency improvement measures Portfolio improvement to reinforce the capacity to adapt to climate change

Risks Related to Climate Change

Item	Impact
Transition Risk	Laws and regulations <ul style="list-style-type: none"> Increasing costs of complying with tightening domestic and overseas regulations related to climate change Litigation risks related to climate change
	Technology <ul style="list-style-type: none"> Technology development for the transition to low-carbon power generation Investment risk for the development of preemptive GHG reduction technology
	Market <ul style="list-style-type: none"> Deterioration of profitability due to increasing raw materials costs during the transition of fuels
	Reputation <ul style="list-style-type: none"> Interests of stakeholders, such as customers and investors, in the fuel used by the power generation industry
Physical Risk	Short-term <ul style="list-style-type: none"> Damage to production facilities caused by short-term disasters, such as heat waves, wildfires, and floods
	Long-term <ul style="list-style-type: none"> Disruption of operations at production facilities due to the long-term impacts of climate change, such as a rise in sea levels

We are also preemptively responding to risks related to climate change by recovering unutilized energy, adopting energy-efficient equipment, reviewing the introduction of CCUS technology, and reducing greenhouse gas emissions at our major subsidiaries (GS Power, Incheon Total Energy).

Reinforced New Business Portfolio of GS Energy

Item	Details
Expanding the company's green power generation portfolio	<ul style="list-style-type: none"> Power generation using renewable energy - solar, wind Investment in SMR(small modular reactor) technology
Leading the reorganization of infrastructure for the clean hydrogen economy	<ul style="list-style-type: none"> Preemptive introduction of clean hydrogen and ammonia Construction of hydrogen/ammonia supply infrastructure
Leading the smart electric power solutions market	<ul style="list-style-type: none"> Expansion of the electric vehicle charging business Securing of operational capabilities and a foundation for VPPs(virtual power plants)
Creating an ecosystem of resources circulation	<ul style="list-style-type: none"> EV battery service (BaaS) EV battery recycling and reuse

[Subsidiaries and Companies Invested in] Responses to Climate Change Risks

Item	Details
GS Power	<ul style="list-style-type: none"> Recovery of unutilized energy Adoption of equipment to raise energy efficiency Response to the emission trading system and reduction of GHG emissions
Incheon Total Energy	<ul style="list-style-type: none"> Recovery of unutilized energy Review of CCUS technology introduction Response to the emission trading system and reduction of GHG emissions
Other Portfolio Companies	<ul style="list-style-type: none"> Shin Pyeongtaek Power Response to the emission trading system and reduction of fine dust Dongducheon Dream Power Improvement of energy efficiency at power generation facilities Cheongna Energy Recovery of unutilized energy Haezoom Solar PV power generation

Preemptive Response to Climate Change

Beyond Strategy for Net-Zero

#1. Expanding the Company's Green Power Generation Portfolio

GS Energy has targeted large-scale solar and wind power generation in Korea as one of its future growth engines as it seeks to implement ESG management. We are pushing ahead with a 200 MW solar power generation project in Dangjin, Chungcheongnam-do, which will begin commercial operation in 2024, and we are also exploring domestic opportunities for offshore wind power generation. In June 2021, the company signed a business agreement with Iberdrola, the world's second largest renewable energy company, thereby establishing a foothold for entering the global renewable energy market, beyond Asia. We also signed an investment contract with NuScale of the US, a SMR technology developer, to preemptively participate in next-generation technology development and prepare for future markets.

Green Energy

Large-scale solar power generation in Korea
Selective entry into wind power generation in Korea/
Construction of a foundation for entering overseas markets

Back-ground

- Growing need for carbon-free energy to achieve GHG reduction targets and increasing demand for corporate ESG portfolios
- Increasing policy support under the government's renewable energy promotion plan



Solar Power

- Pursuit of solar power generation projects on low-grade agricultural land

Business: GS Dangjin Solar Farm (238 MW)
Commercial operation slated for 2024

- Exploration of additional opportunities to realize large-scale solar power generation
- Low-grade agricultural land, land owned by the Korea Rural Community Corporation, offshore solar power, etc.



Wind Power

- Exploration of opportunities to enter the domestic wind power market



Overseas Markets

- Ongoing network-building with global energy companies
- Analysis of the renewable energy markets in North America and Vietnam and discovery of business opportunities
- Review of next-generation technologies for nuclear power (SMR)

Responses of Portfolio Companies to Climate Change Risks

Renewable Energy

GS Energy is taking the lead in responding to climate change by entering the renewable energy industry and is participating in the energy revolution for carbon neutrality. Moving forward, we plan to advance into the global renewable energy industry by conducting various renewable energy businesses, such as wind and solar power generation.

GS Dangjin Solar Farm

GS Dangjin Solar Farm is a fully-owned subsidiary of GS Energy established in October 2020 to operate and manage a solar power plant under construction on a low-grade agricultural land in Chorakdo-ri, Seokmun-myeon, Dangjin, Chungcheongnam-do. It acquired a license for a power generation business with a capacity of 238 MW in December 2020, and is slated to start commercial operation in 2024 with an annual production of about 300,000 MWh of electricity. Moving forward, it will make continuous efforts to contribute to the stable supply of renewable energy in line with the government's Renewable Energy 3020 Plan.

Address	Chorakdo-ri, Seokmun-myeon, Dangjin, Chungcheongnam-do
Capacity	238MW
Site	3.1 million m ²
Investment	KRW 300 billion
History	<p>Sep. 2020: Approved by GSE BOD – Foundation of SPC</p> <p>Oct. 2020: Established SPC</p> <p>4Q 2020: Acquired a power generation business license</p> <p>3Q 2022: Acquired all necessary permits, passed an environmental impact assessment</p> <p>4Q 2022: Groundbreaking ceremony</p> <p>2024: Completion and commercial operation</p>

SMR

SMRs (small modular reactors) are future-oriented reactors that are expected to play a key role in achieving carbon neutrality by 2050 as an eco-friendly, safe, and stable source of energy. Currently, nuclear power generation is classified by the EU as a “green” economic activity that's friendly for the environment and climate. Accordingly, in June 2021, GS Energy made an investment in NuScale Power, which has the world's most advanced SMR technology, and secured exclusive business rights in Korean Peninsula. GS Energy will strive to ensure a continuous supply of reliable and eco-friendly energy.



NuScale Power received design certification approval from the US NRC (Nuclear Regulatory Commission) in 2020, and is currently developing FOAK (first-of-a-kind) plant funded by the US Department of Energy. GS Energy will continue to expand its clean energy portfolio and pursue technological innovation, such as SMRs, which will become a key technology to achieve carbon neutrality.

Conventional large-scale power plant

Size of Scale

- Height 67m, Site 125,000m²

100%
67m



Construction period

- About eight years.
On-site construction only

SMR power plant

Size of Scale

- 40% of the land required for a conventional power plant. The size can be adjusted according to the number of modules required

37%
23m



Construction period

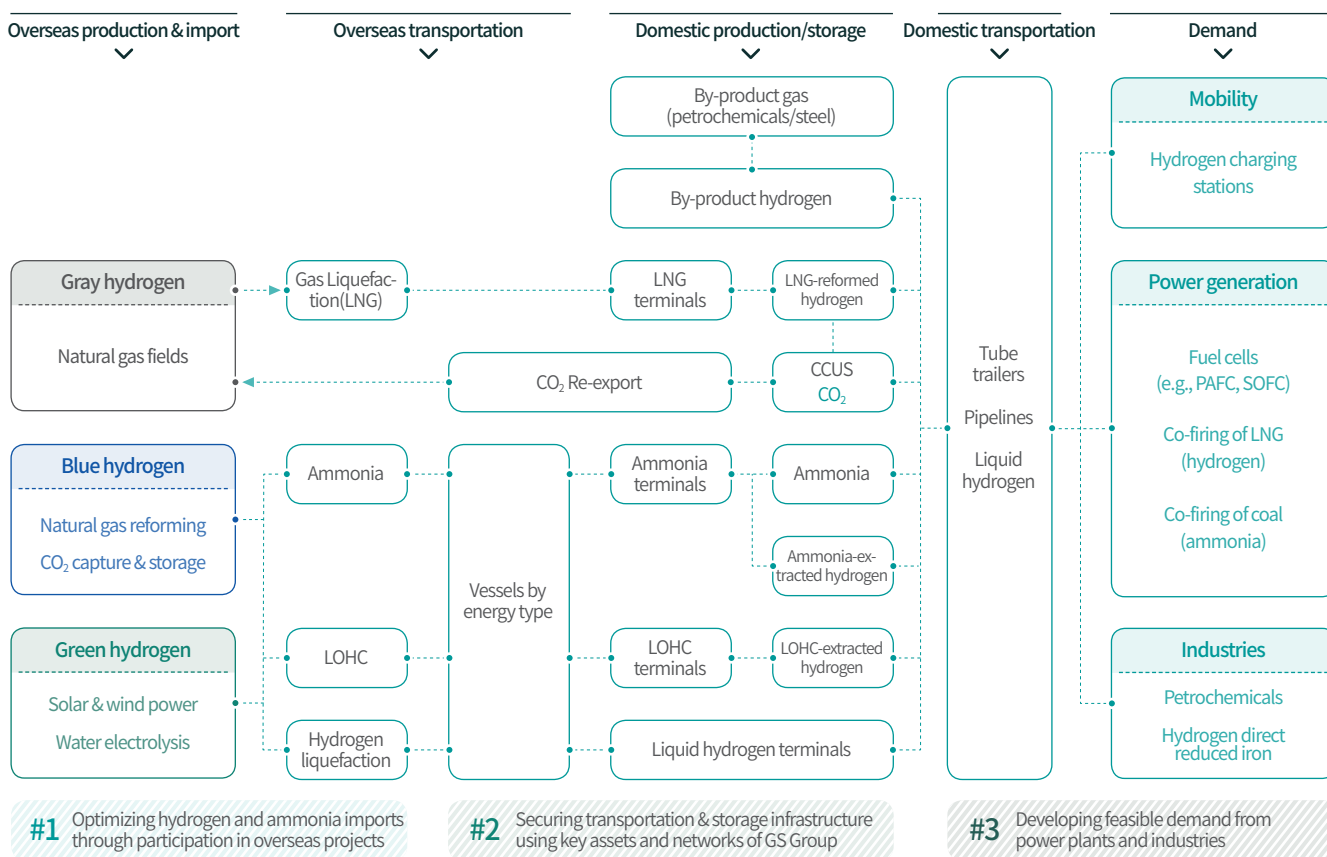
- About four years. Key equipment is manufactured in a factory and transported to the construction site for installation

Preemptive Response to Climate Change

Beyond Strategy for Net-Zero

#2. Leading the Reorganization of Infrastructure for the Clean Hydrogen Economy

Starting with the eco-friendly blue ammonia development project of ADNOC, GS Energy looking to take part in more projects aimed at securing a continuous supply of clean hydrogen and ammonia from overseas sources. In addition, we are pushing ahead with the construction of infrastructure to stably supply clean hydrogen and ammonia imports to consumers, and exploring various business models that utilize CCUS(carbon capture, utilization and storage) to reduce greenhouse gas emissions.



A Step for NET-ZERO

Import of Clean Hydrogen and Ammonia

Given the current status of and environment for renewable power generation and CO₂ storage in Korea, it seems virtually impossible that the significant growth presented in the government's hydrogen roadmap and hydrogen demand forecast can be satisfied with the domestic production of clean hydrogen alone. Hence, it is necessary to import clean hydrogen and ammonia. GS Energy has participated in an eco-friendly blue ammonia project of ADNOC, a state-owned oil company of the UAE, and is also taking part in various projects to import clean hydrogen and ammonia to Korea from diversified suppliers in the Middle East, Australia, and North America.



Construction of Hydrogen & Ammonia Supply Infrastructure

To ensure a reliable supply of clean hydrogen and ammonia imported from overseas production projects to consumers, it is essential to build infrastructure, such as hydrogen and ammonia terminals and pipelines. In that regard, GS Energy is pushing ahead with the construction of supply infrastructure by utilizing key assets and networks (domestic and overseas) of GS Group, and is actively involved in discussions with various users (power plants, industries, and GS Group affiliates) regarding the supply of clean hydrogen and ammonia and the construction of related infrastructure.



Preemptive Response to Climate Change

Beyond Strategy for Net-Zero

#3. Leading the Smart Electric Power Solutions Market

GS Energy is making a foray into the charging infrastructure installation and operation business, which is essential to the electric vehicle(EV) ecosystem. In August 2021, the company established G-Connect, a joint venture with GNTEL, and it currently operates over 8,500 EV chargers nationwide. Moving forward, we are expanding EV charging infrastructure to apartment complexes and office buildings with the goal of becoming the largest EV charging company in Korea. Furthermore, we will make continuous efforts to lay the foundation for a VPP (virtual power plant) business whereby surplus power is collected from distributed PV(photovoltaic), DR(demand resource), and ESS(energy storage system) power sources and supplied where it is needed based on real-time data collection and analysis.

New electric power business

- Connection and integrated management of various distributed resources
- Expansion of the EV charging network

Back-ground

- Growing instability in the power supply due to increased power generation by renewables
- Greater need for digitalized energy solutions to supplement power systems

Back-ground

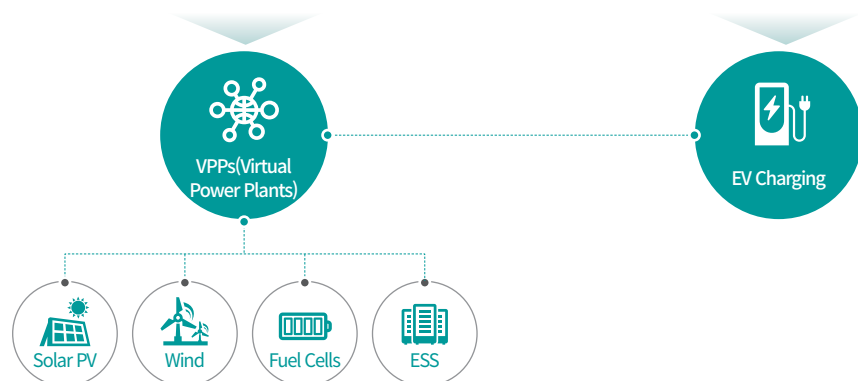
- Policies to promote EVs and the rapid increase in EV demand (expected)

Business

- Integration of resources and optimization of trading
- Power generation forecasting/bidding
- Continuous expansion of VPP resources (mid-to long-term)
- Securing competencies to operate an integrated platform

Business

- Construction of charging networks in residential areas and securing of customer demand
- Reinforcement of operating platforms and expansion of connected services to improve the customer experience
- Establishment of a foundation for EV-based new electric power businesses



#4. Creating an Ecosystem of Resources circulation

GS Energy is exploring business opportunities through EV battery recycling. In June 2021, the company signed MOUs with MinTech, which diagnoses and evaluates the condition of batteries, and GS Mbiz, which has a nationwide automobile maintenance network, and it is currently developing a BaaS business model for EVs. Based on this, we also plan to launch a battery recycling business, thereby contributing to the creation of an ecosystem for resources circulation. The company reached an agreement with POSCO in September 2021 to establish a joint venture for “new mobility” and launch a EV battery recycling business where lithium, nickel, cobalt, manganese, etc., will be extracted from end-of-life EV batteries and recycled as battery materials.

Battery Recycling

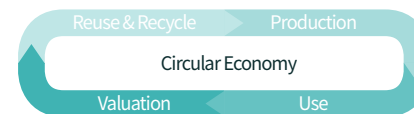
- Efficient collection of end-of-life batteries through existing nationwide networks
- Creation of new value through the diagnosis/evaluation of collected batteries
- Creation of a resources circulation ecosystem by EV battery recycling for battery materials.

Back-ground

- Increased end-of-life batteries due to expansion of ESS and EV
- Growing needs for an entity to diagnose, evaluate and manage batteries to further expand EVs
- Growing social interest in a circular economy for the battery materials.

Mega Trends Related to EVs

1. Demand for a transition to a circular economy



2. Increase in end-of-life batteries

The number of end-of-life batteries is expected to increase along with growing EV sales



Strategies

1. Battery collection and customized battery management using customer networks

Battery collection capability

Construction of a battery circulation ecosystem through existing networks



2. Investment in new technology and pursuit of partnerships to build a circular ecosystem

Reuse

Creation of new value, such as ESSs for renewables



Recycle

Conversion to battery materials



Preemptive Response to Climate Change

ESG Enabler

Strategies to Explore New Businesses Overseas

GS Energy has identified three areas of investment in line with the latest trends in the global energy industry and aims to secure future growth engines through the preemptive review of and investment in overseas companies with leading technologies.



Preemptive Response to Climate Change

Response to Climate Change Risks

Recovery of unutilized Energy



Recovering unutilized energy and recycling it for district heating services is expected to create synergy by cutting heat production costs and securing carbon credits in return for the reduced use of fossil fuels. GS Power has continued to develop technology to efficiently tap into unutilized energy and currently owns seven patents. It has concluded agreements with the local governments of the areas it is supplying with district heating (Bucheon and Anyang) to utilize unutilized energy from urban infrastructure. GS Power also offers consulting on technology for the recovery and supply of unutilized energy and is participating in a national R&D task, "Smart Zero Energy City," a research project on next-generation energy supply to cities.



Unutilized energy recovery project for the Gulpo sewage treatment plant in Bucheon



Smart Zero Energy City, a national R&D task



The power plants in Incheon supply 60,000 GWh of energy annually, contributing to a sustainable life for citizens in Incheon. However, about 66 million tons of greenhouse gases are emitted into the air during the power generation process. Incheon Total Energy is making continuous efforts to discover, invest in and operate new, external sources of heat in order to recover and recycle unutilized energy emitted into the air. Through these activities, the company has reduced gas turbine operation, reducing LNG usage by 34,000 tons and reducing GHG emissions by 55,000 tons per year.



Energy efficiency improvement project

Installation of Equipment to Improve Energy Efficiency (Heat Pumps)



A heat pump is a device that uses the heat or compressed heat of a refrigerant to transfer heat from a low temperature area to a high temperature area or vice versa. In November 2010, GS Power installed heat pumps in its combined heat and power plants in Anyang and Bucheon, a first in Korea. They produce 9 Gcal/h (equivalent to supplying 7,000 households) by using the cooling water of the power plant as a heat source for the evaporator. Furthermore, GS Power has developed and commercialized a technology to recover unutilized heat and recycle it for district heating by using a medium-temperature water absorption heat pump, the first of its kind in the world.



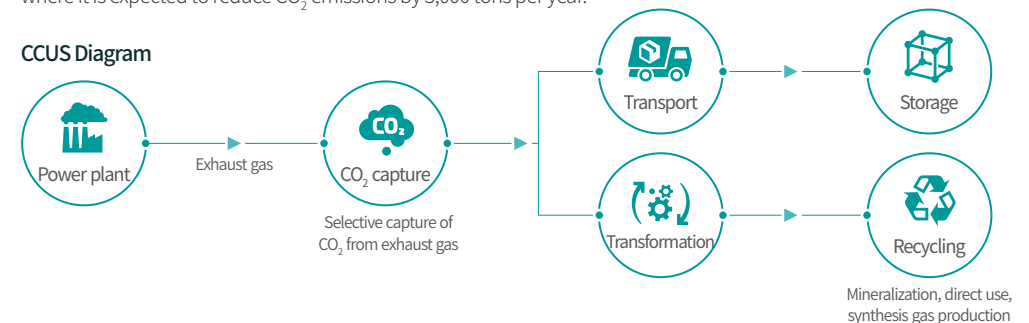
Low-temperature heat recovery from fuel cells in Bucheon

CCUS(Carbon Capture Utilization & Storage)



CCUS(carbon capture, utilization and storage) includes technologies for capturing, storing and utilizing carbon dioxide. It has drawn attention from around the world as a major tool for achieving carbon neutrality. Incheon Total Energy is considering to construct a CO₂ capture demonstration facility customized to its LNG power plant and is planning a pilot test for CCUS adoption. Based on the pilot test results, CCUS will be applied to the power plant, where it is expected to reduce CO₂ emissions by 3,000 tons per year.

CCUS Diagram



Preemptive Response to Climate Change

Response to Climate Change Risks

Greenhouse Gas Emissions and Energy Use



GS Power is subject to the emission trading system, and every year it submits to the government statements of GHG emissions and energy consumption verified by an independent verifying institution. During the first phase (2015~2017) and the second phase (2018~2020) of the emission trading system, GS Power kept its GHG emissions below the quota set by the government. The third phase (2021~2025) of the trading system is now underway. Every year, GS Power has improved its GHG emissions calculation plan to measure energy consumption and GHG emissions with greater accuracy and to collect supporting data and measure parameters in a more systematic manner. It also established a GHG inventory to monitor and manage monthly GHG emissions. GS Power is making continuous efforts to reduce energy use, such as by adopting energy-efficient facilities at its combined heat and power plants to reduce GHG intensity.

GHG Emissions

Item	Unit	GS Power			Incheon Total Energy		
		2019	2020	2021	2019	2020	2021
Total GHG emissions	tCO ₂ eq	1,771,569	1,953,049	2,198,431	392,384	323,596	382,327
Direct emissions (Scope I)		1,749,593	1,931,348	2,174,034	389,652	319,988	379,251
Indirect emissions (Scope 2)		21,981	21,704	24,402	2,732	3,608	3,076

Energy Use

Item	Unit	GS Power			Incheon Total Energy		
		2019	2020	2021	2019	2020	2021
Total energy use	TJ	83,576	79,384	82,939	7,769	6,386	7,545
Direct use*		34,418	37,127	41,739	7,749	6,362	7,523
Indirect use**		49,158	42,257	41,200	20	24	21

*Fuel consumed by renewable energy facilities such as power plants and fuel cells: LNG for both GS Power and Incheon Total Energy

**Energy use other than fuels, a main energy cost item



Incheon Total Energy is fulfilling its obligation to reduce GHG emissions in accordance with the Framework Act on Low Carbon, Green Growth and the Act on the Allocation and Trading of Greenhouse Gas Emission Permits. It has implemented mid-to long-term plans to decrease carbon emissions, including the installation of energy-efficient power generation facilities and improvements to existing processes to enhance energy efficiency, and is conducting pilot tests to introduce CCUS(carbon capture, utilization and storage) technology. Furthermore, Incheon Total Energy has secured adequate carbon credits by applying and upgrading BM coefficients for the rational allocation of carbon credits, and is maximizing its profits by trading surplus carbon credits based on continuous monitoring of revisions to relevant laws and market trends. As such, Incheon Total Energy is responding efficiently to the emission trading system. In 2021, it secured an additional emissions quota of 22,326 tons in preparation for increasing its supply of heat.

Responses of Portfolio Companies to Climate Change Risks



Shin Pyeongtaek Power has met its targets under the greenhouse gas and energy target management system and the emission trading system on time, and during the third phase of the emission trading system it secured an emissions quota of up to 1.89 million tons per year (2022~2023). It adopted and updated systematic tools for its GHG inventory in order to set a reliable foundation for MRV(monitoring, reporting and verification). Shin Pyeongtaek Power also improved data credibility through professional consulting, periodic inspections of energy consumption measurement and control facilities, and verification by an independent agency. Furthermore, it is seeking to enhance its ability to achieve reduction targets by establishing GHG trading strategies and developing competencies by actively engaging employees in seminars and training sessions. In addition, SCR operation has been optimized to minimize NOx emissions in anticipation of the government issuing emergency measures to reduce ultrafine dust.



Dongducheon Dream Power has decreased energy consumption through the installation of fan motor inverters in its cooling tower and by not operating unnecessary rotating equipment (e.g., high voltage motors, auxiliary boilers) when starting up or shutting down the facility. Dongducheon Dream Power plans to carry out various activities to reduce carbon emissions so as to contribute to the government's plan to reach carbon neutrality by 2050.



Cheongna Energy uses no fossil fuels. Instead, it recycles wasted heat energy, such as waste heat from power plant smokestacks, waste-burning heat from resource recovery facilities, and waste steam heat from fuel cells, in order to provide district cooling and heating services. In this way, it is taking part in the government's GHG emissions reduction scheme as well as contributing to energy cost reductions and improving the air environment of the nation.

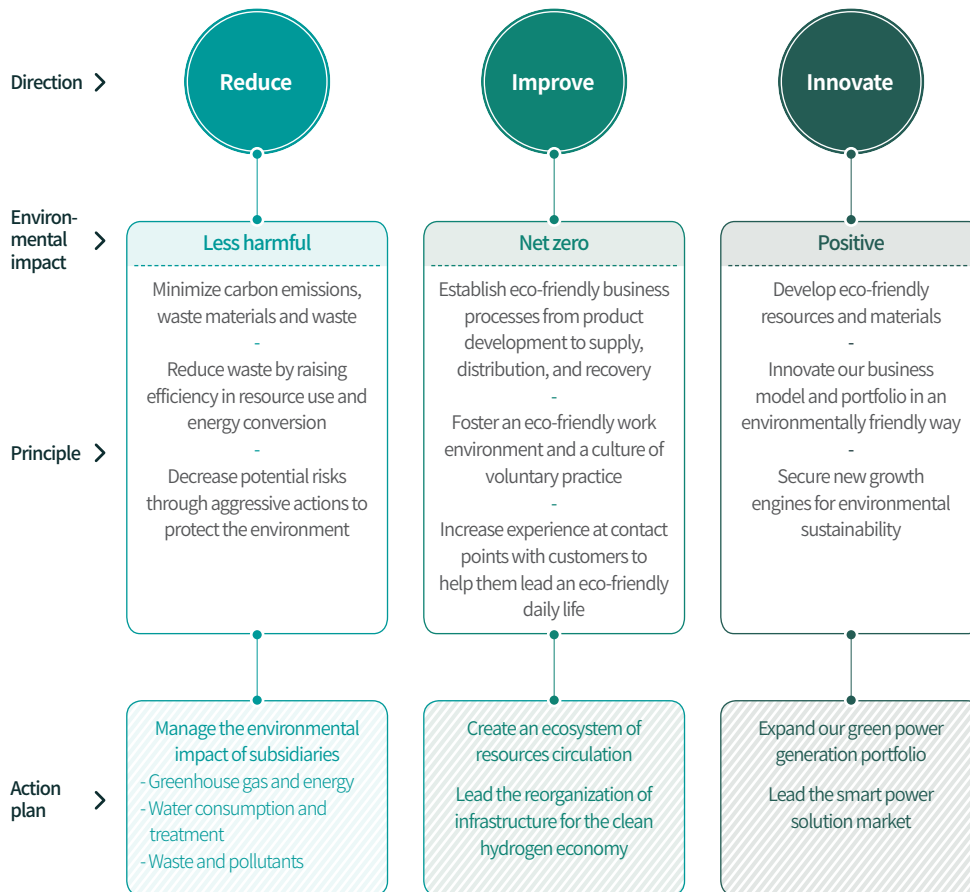
HAEZOOM

Haezoom focuses on increasing the supply of renewables through various solar PV and power services, including RE100 consulting, and has installed and manages about 4,000 solar power plants. Through CSR activities such as Hope Haezoom and its energy sharing project, Haezoom is supporting the energy poor by installing solar PV facilities and paying electricity bills. Every time it installs a solar power plant, Haezoom donates solar lanterns to Africa.

Reinforced Environmental Responsibility

Environmental Management System

GS Energy is committed to building low-carbon and eco-friendly business sites to address the growing social demand for companies to respond to climate change and minimize their environmental impact. For this, we have set specific mid-to long-term action plans, centered on the “Beyond Strategy,” in line with the directions for environmental impact management set by GS Group. In particular, we are fulfilling our environmental responsibility as a holding company by monitoring the environmental impact of our major subsidiaries (GS Power, Incheon Total Energy).



Environmental Management Policy

GS Energy will actively address environmental issues in compliance with the environmental management policy of GS Group, as follows.

Environmental Management Policy of GS Group

[Philosophy of Environmental Management]

GS Group affiliates recognize that the environment has a significant impact on business activities and strive to address environmental issues for sustainable management by developing product recycling resources to minimize negative environmental impacts, making investments to reduce pollution and energy consumption, and engaging in new, eco-friendly businesses.

[Scope of Application]

This policy applies to the businesses of all GS Group affiliates (including GS Corp., its subsidiaries and sub-subsidiaries), but implementation is voluntary, although recommended, so as not to infringe on the autonomous management of the affiliates.

[Objectives]

1. Production

GS Group affiliates should strive to enhance efficiency in the environmental management of their production and business facilities through all processes, from target management to education and training, document and record management, and internal audits. GS Group affiliates should manage environmental pollution by providing guidelines to minimize pollution caused by the operation, maintenance, and repair of production facilities.

2. Development of Products and Services

GS Group affiliates should recognize the risks and opportunities that various environmental issues may pose on business and strive to develop products and services that minimize environmental impact.

3. Distribution and Logistics

GS Group affiliates should implement internal regulations to minimize environmental pollution arising from the transportation of products and services.

4. Waste Management

GS Group affiliates should manage selective waste collection and storage facilities; waste generation, collection, storage and disposal; and inspection, outsourcing and monitoring in order to reduce the amount of waste generated.

5. Evaluation of Suppliers, Contractors, and Service Providers

GS Group affiliates should include environmental management in the selection criteria for suppliers, contractors, etc., in order to minimize environmental impacts.

6. New Projects

GS Group affiliates should conduct an environmental impact assessment before embarking on a new project and use the results for the environmental management of the new project site in order to reduce environmental impact.

7. Due Diligence before M&As

GS Group affiliates should strive to identify environmental risks by conducting due diligence prior to M&As and responding preemptively.

Reinforced Environmental Responsibility

Management of the Environmental Impact of Subsidiaries

Water Resources



A combined heat and power plant produces and supplies both electric power and heat. It turns water into steam in the HRSG(heat recovery steam generator), and the steam is used to produce electric power. A portion of the steam is also used to provide heating through heat exchange. This kind of system consumes a great deal of water. GS Power's combined heat and power plants are located inland, so more than 90% of water is used for cooling, and water consumption varies significantly depending on the amount of power generated, particularly in summer. GS Power aims to minimize water consumption and reduce the discharge of water pollutants by minimizing wastewater discharge. Furthermore, wastewater with good water quality is collected and recycled.



Incheon Total Energy operates wastewater treatment facilities to protect water resources and reduce the consumption of water and wastewater. To reduce clean water consumption, grey water is treated and recycled as a water resource. In 2021, 9,909 m3 of grey water was recycled, reducing water consumption by 42.98% and wastewater treatment costs by KRW 40 million.

Water Use and Reuse

Item	Unit	GS Power			Incheon Total Energy		
		2019	2020	2021	2019	2020	2021
Water intake	1,000 tons	1,801	2,078	2,358	61	64	90
Total water use		2,106	2,463	2,750	61	64	90
Wastewater discharge		193	231	266	22	19	24
Water reuse		306	385	392	13	10	8
Water reuse rate	%	14.5	15.6	14.3	21.0	15.0	8.7

Waste



GS Power transparently manages the entire process of waste management, from waste generation to storage, transportation, and final disposal through the 『Allbaro System (IT-based comprehensive waste management system)』 operated by the Korea Environment Corporation. Furthermore, it minimizes waste generation by saving resources and increasing the recycling rate, and the waste generated is disposed of by outsourced agencies in compliance with legal procedures. Meanwhile, non-industrial waste generated at the company's business sites is collected using separate boxes to expedite recycling. Waste fluorescent lamps are all sent to the Korea Lighting Recycling Association for recycling.



Waste generated by Incheon Total Energy is classified into three types: 1) general waste such as wastewater treatment sludge, waste synthetic resins, and waste adsorbents, 2) designated waste including liquid and solid waste oils, and 3) construction waste generated during heat pipes installation. Incheon Total Energy strives to minimize waste generation at the source across its business sites, and classifies waste by type and characteristics in order to maximize waste reuse and recycling. Designated waste and waste adsorbents which are recyclable and reusable are sent to specialized companies for recycling and reuse. The entire process of waste management, from waste generation to storage, transportation, and final treatment is managed online or using RFID* in line with the Allbaro System-Waste Information Service operated by Korea Environment Corporation.

* RFID: technology to identify objects or people, using RF(radio frequency)

Waste Generation and Recycling

Item	Unit	GS Power			Incheon Total Energy		
		2019	2020	2021	2019	2020	2021
Total amount of waste	ton	843	763	734	18	22	42
General waste		831	748	714	17	9	18
Designated waste		12	15	20	1	13	24
Amount of waste recycled	%	466	414	331	4	17	27
Waste recycling rate		55.3	54.3	45.1	22.2	77.3	64.3

Reinforced Environmental Responsibility

Management of the Environmental Impact of Subsidiaries

Water Pollutants



GS Power purifies wastewater discharged from its power plants through physical and chemical processes at wastewater treatment facilities, and then sends the purified water to nearby sewage treatment plants. In addition, the company analyzes wastewater quality on a regular basis in order to ensure water quality and enhance transparency in environmental management. Through these efforts, the concentrations of water pollutants in the wastewater discharged from GS Power are quite low, reaching only about 10% of legal limit.



Wastewater from the business sites of Incheon Total Energy goes through physical and chemical processes at its wastewater treatment plant before being discharged to a sewage treatment facility in Songdo, Incheon. Incheon Total Energy efficiently manages wastewater quality through regular measurements and continuous monitoring. The concentrations of water pollutants in its discharged wastewater is kept below 10% of the legal limit.

Discharge of Water Pollutants

Item	Unit	GS Power			Incheon Total Energy		
		2019	2020	2021	2019	2020	2021
COD(chemical oxygen demand)	kg	722	815	990	119	102	102
SS(suspended solids)		239	308	387	16	1	14

Air Pollutants



GS Power operates air pollution prevention equipment, such as low NOx burners and SCRs, to effectively respond to air pollutant emission cap regulation. Furthermore, it periodically conducts facility inspections and improves processes, and as a result, for instance, NOx emissions decreased to 56% of the total emissions permits for 2020. TMS(tele-monitoring system) monitors air pollutant emissions 24/7 and sends data to the air pollutant emission cap management system (Stacknsky) in real time, thereby enhancing transparency in air quality management. GS Power has set more stringent internal standards than the legal limits in its endeavor to reduce air pollutant emissions.



Incheon Total Energy uses LNG, a clean fuel, to manage and reduce air pollutants, and operates facilities optimized to reduce air pollutants such as NOx. A TMS(telemonitoring system) monitors air pollutant emissions 24/7 and sends data to the Korea Environment Corporation in real time, reinforcing transparency in the management of environmental data. Furthermore, the company conducts inspections and continuous monitoring, and has preemptively installed air pollution prevention facilities using new technologies (DI SCR, oxidized steel dust collector) to keep air pollutant emissions below the integrated environmental permit. In 2021 in particular, its average NOx emissions were 7 ppm, which was lower than the integrated environmental permit of 8 ppm and about 46% of its emissions quota. In recognition of its continuous efforts to improve the local environment and contribute to environmental conservation and air pollutant reductions, Incheon Total Energy was awarded by both the Mayor of Incheon Metropolitan City and the Director of the Metropolitan Air Environment Agency in 2021. In addition, the company entered the Blue Sky Agreement with Incheon Metropolitan City and a voluntary agreement to reduce fine dust as part of its endeavors to decrease fine dust in the local community and minimize environmental impacts.

Air pollutant emissions

Item	Unit	GS Power			Incheon Total Energy		
		2019	2020	2021	2019	2020	2021
NOx(nitrogen oxide)	ton	649	549	680	124	75	67

Reinforced Environmental Responsibility

Management of the Environmental Impact of Subsidiaries

Chemical Substances



GS Power uses chemicals in its water treatment process to produce pure water and cooling water for its power generation and heating facilities. The amount of chemicals used depends mainly on the water quality at the sources of industrial water, such as the Baekun reservoir and the Lake Paldang (water supply to Anyang and Bucheon) and demineralized water production, but is expected to steadily increase as expanded heat supply to nearby districts requires an increase in pure water consumption. All chemicals are lawfully managed in accordance with relevant laws, such as the Chemical Substances Control Act and the Occupational Safety and Health Act. GS Power has reduced the concentration of chemicals used in its combined heat and power plants in Anyang and Bucheon, and has closed business utilizing hazardous chemicals. Furthermore, it is making the utmost efforts in chemicals management by complying with the GHS(Global Harmonized System) in the classification and labeling of chemicals. Since 2013, GS Power has contributed to the formation of an industrial community involving large companies and SMEs in the western (Bucheon Power Plant) and southern (Anyang Power Plant) parts of Gyeonggi-do and has provided full support to SMEs to help them comply with the Chemical Substances Control Act. The company also participates in government-led emergency response drills.



Incheon Total Energy has lowered the concentrations of hazardous chemical substances used and generated at its business sites in order to protect employees. Its business sites are subject to PSM* and hence it manages chemical substances efficiently through regular MSDS** updates.

* PSM(process safety management system): Companies submit a process safety report for evaluation in order to prevent serious industrial accidents caused by the leakage of hazardous substances, fires, explosions, etc.

** MSDS(material safety data sheet): A table containing data necessary for the safe use and management of chemical substances



GS Power Preemptive Actions to Minimize Environmental Impacts

Environmental Impact Assessment

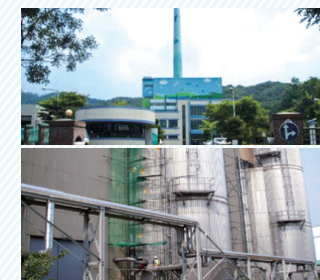
Before constructing a power plant, GS Power conducts an environmental impact assessment to examine the existing environment of the surrounding area, such as the natural environment and traffic conditions, predict the impact that might arise after construction, and come up with measures to minimize environmental pollution. After power plant construction, the company analyzes what impact the operation of the power plant will have on the surrounding area and the ecosystem, and monitors environmental impact every year. After the post-environmental impact assessment is completed, GS Power continues to track and manage the environmental impact every year. When it comes to a new project or business expansion, the company also carries out a preliminary environmental impact assessment for the purpose of identifying and minimizing potential impact. In line with the assessment procedures, the company organizes an environmental impact assessment team to prepare and evaluate an environmental impact assessment table for each process. Environmental impacts are classified by grade according to the degree of the impact and registered with the environmental impact register. Then, targets and actions for environmental management are set accordingly.

Target Management System

Environmental Impact Assessment	Schedule	Assessment items
Assessment of the area surrounding the power plant	Before construction	Items set forth in Article 24 of the Environmental Impact Assessment Act
Post-assessment	Groundbreaking ~ 5 years after construction completed	Items set forth in Article 24 of the Environmental Impact Assessment Act
Noise assessment around the power plant	Occasional	Noise
Environmental impact assessment according to the assessment procedure	Occasional	Processes, products and services
Pre-assessment	Planned, preventive maintenance	All types of construction

Environmentally Friendly Products

GS Power has installed heat exchangers between the HRSG(heat recovery steam generator) and the main stack of its power plants and recovers heat within a scope that does not affect the air environment. Furthermore, heat (Heat-D) generated in the water cooling and start-up processes of its power generation facilities is recovered for heating. GS Power also strives to recover waste heat from its resource recovery facilities in Gwangmyeong and Daejang-dong, Bucheon, and from the thermal power plant of Korea Midland Power in Incheon. For this, it has installed heat pipelines to reduce fuel consumption for heat production, and accordingly, greenhouse gases and other air pollutants as well.



SOCIAL RESPONSIBILITY

Optimized Employee Experience

Innovate the Way We Work	34
HR System	36
Human Rights Management	38

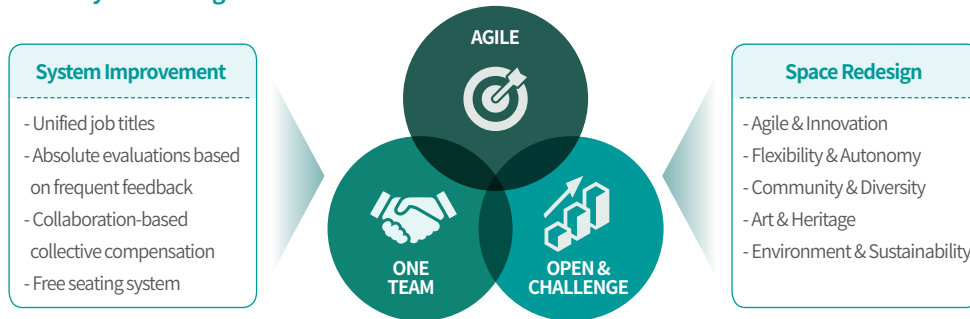
Contribution to the Development of Local Communities

CSR Promotion System	39
Major CSR Activities	39

Optimized Employee Experience

Innovating the Way We Work

New way of Working

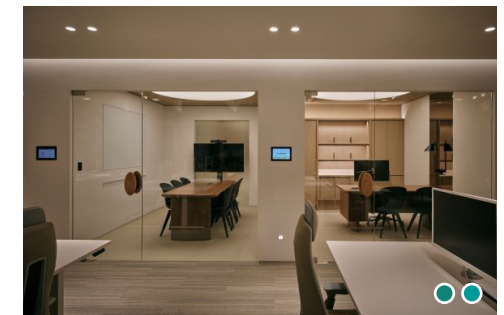
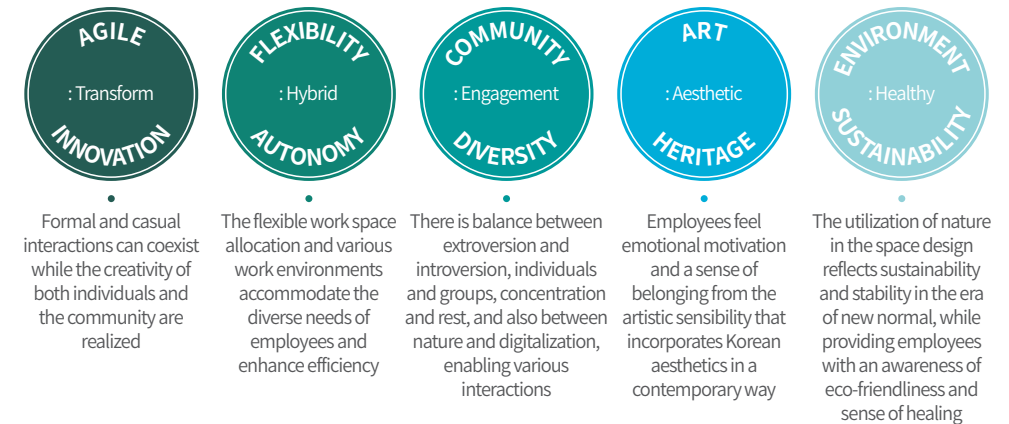


At GS Energy, the way we work is represented by “Agile,” “Open & Challenge,” and “One Team.” “Agile” means we find issues by remaining sensitive to changes in our business and concentrating company-wide resources on trouble shooting, thereby trialing and verifying small and fast solutions. This means that we define issues from the customers’ perspective and resolve them by repeating small and quick verifications. “Open & Challenge” means we voluntarily challenge ourselves to take on work we have never done before. We set targets on our own and grow by improving our practical expertise and influence as we experience and learn about various roles and fields. “One Team” means all members of GS Energy work as one team pursuing common goals under the premise that no one can grow and innovate alone, and we grow and ceaselessly innovate through collaboration. The company reshuffled relevant systems in 2020 to support these new ways of work and redesigned its working spaces in 2021.

For this, the names of all job titles were unified as manager in a bid to foster a non-authoritarian, horizontal corporate culture, and an absolute evaluation system based on frequent feedback was introduced. Furthermore, the direction of employee compensation was shifted from merit-based compensation of individuals to collaboration-based collective compensation.

Following the redesign of our working space, it is now characterized by “Agile & Innovation,” “Flexibility & Autonomy,” “Community & Diversity,” “Art & Heritage,” and “Environment & Sustainability.” This allows for both formal interactions and casual interactions in various forms whereby the creativity of both the community and individuals are realized, allowing for better engagement in work. We seek harmony between the community and individuals, and between concentration and rest. We feel a sense of belonging and pride in this new community space and its effect is maximized with the free seating system, leading to changes in the way we work at GS Energy.

New Values for GS Energy’s Working Space



Optimized Employee Experience

Innovating the Way We Work

Welfare Program

GS Energy provides various welfare benefits to improve the quality of life of its employees, including stable livelihood, self-development, health care and leisure benefits. To promote work-life balance in particular, the company is striving to develop programs to support the happy family life of employees and making investments to raise work efficiency.

Flexitime System

Under our flexitime system, employees can set their own working hours on a monthly basis within the legal working hour limit. They can also stay safe by working from home in the midst of the COVID-19 pandemic.

Financial Support for Retirees

Retirement pensions are accumulated with compound interest under two pension plans: DB(defined benefit) or DC(defined contribution). The company also supports IRPs(individual retirement pensions) by offering matching grants, and introduced a DC-type payment system for bonuses at the end of 2021 to relieve its employees of tax burdens.

Retirement Pension System

Classification	Unit	2019	2020	2021
Amount		2,374	2,665	4,362
DB(defined benefit)	KRW million	2,000	1,800	3,400
Type DC(defined contribution)		45	52	47
Company grants to IRPs		629	813	915
Subscribers	Persons	139	151	167

Congratulations for Long-term Service and Retirement

Congratulatory money and vacation time are offered as a token of appreciation to employees with long years of service or who have reached retirement age.

Selective Welfare System

The company operates a welfare mall and a welfare point system where employees can choose from various benefits for self-development, leisure activities, health care, etc.

Support for Leisure Activities

Our employees can use resorts and condominiums across the country at membership prices throughout the year, and winter and summer resorts are provided free of charge (except for some resorts) to support the leisure of employees.

Health Care Support

With the aim of improving the health of employees, their spouses and children, the company pays a certain amount of the medical expenses of its employees so as to reduce their financial burdens and ensure a stable livelihood. Furthermore, our employees are covered by collective medical insurance and comprehensive medical examinations are provided to them and their spouses as a preemptive health care measure.

Support for Living (Loans, In-house Daycare, and Tuition)

The company provides loans to employees at low interest rates to help them with house purchases, marriage or living expenses, for the purpose of stabilizing livelihood and promoting employee welfare. We also operate an in-house daycare center near the GS Tower to help our employees with child-rearing. Furthermore, the company pays university tuition for its employees' children and provides congratulatory money upon their entrance into elementary, middle, and high school and university. For preschoolers, we provide schooling subsidies for a certain period.

Support for Family Events and Funerals

The company provides support for family events and funerals of its employees to share in their joys and sorrows.

Welfare benefits

Classification	Unit	2019	2020	2021
Amount	KRW million	1,638	1,841	1,746

Parental Leave

Classification	Unit	2019	2020	2021
On parental leave	male	2	3	1
	female	3	0	0
Returnees	male	0	2	0
	female	1	1	0
Return rate*	%	100	75	-
Retention rate**		-	100	100

*Return rate: Ratio of employees returning from parental leave in the following year

** Retention rate: Ratio of employees working for 12 months or more after returning



Jiyesul day care center

Optimized Employee Experience

HR System

Manpower

GS Energy respects diversity in its workforce and prohibits discrimination by reason of nationality, race, gender, religion, educational background, region, or social status in hiring and promotion. In particular, socially disadvantaged people, such as persons with disabilities, and persons of national merit are granted additional points during recruitment.

Employees

Classification	Unit	2019	2020	2021
Total number of employees		141	154	168
Gender	male	120	126	133
	female	21	28	35
Age	under 30	17	17	21
	30~50	106	110	116
	50 and above	22	27	31
Employment status	Regular workers*	138	145	157
	- male	119	124	129
	- female	19	21	28
	Contract workers**	3	9	11
	- male	1	2	4
	- female	2	7	7
Socially disadvantaged	Disabled persons	1	1	1
	Persons of national merit	3	3	4

*Regular workers: no limit set for the employment period (including executives)

** Contract workers: fixed-term for employment

Diversity of Employees

Classification	Unit	2019	2020	2021
Ratio of females to all employees		15.6	18.4	21.3
Ratio of females in managerial positions		3.5	6.5	6.5
Salary level of females vs. males*	general jobs	82	90	89
	managerial jobs	94	98	108

*Ratio of rewards for women when those for men are equal to 100

Ideal Employees

GS Energy sets and implements strategies to secure a talented workforce that will lead the future of the energy industry with strong passion and a spirit of innovation, and promotes its ways of work as follows.



Recruitment and Turnover

Classification	Unit	2019	2020	2021
Total number of hires		11	21	27
Gender	male	8	14	17
	female	3	7	10
Age	under 30	4	7	9
	30~50	7	10	17
	50 and above	0	4	1
Total turnover	persons	12	10	16
Gender	male	7	9	13
	female	5	1	3
Age	under 30	2	1	3
	30~50	7	6	10
	50 and above	3	3	3
Total turnover rate	%	8.5	6.5	9.5
Voluntary turnover rate		1.4	1.3	6.0

* Total number of hires: executives, regular employees, contract employees, and others who joined the company for any reason (excluding dispatched employees)

** Voluntary turnover rate: excluding retirement due to retirement age, service termination, dismissal, etc.

Education System

New employees at GS Energy can feel a sense of belonging through the company's onboarding program. As the company is involved in various business fields, job training is conducted by each department through its own training budget. Every year, outstanding employees are enrolled in graduate schools or specialized training courses so as to build experience, expertise and networks. Considering that overseas business is a big part of our operations, various foreign language training programs are provided, including online, telephone, video, and face-to-face courses, and self-study.

Open Innovation

In line with the digital transformation, training courses on data and DX (digital transformation) are provided to employees upon request, and various issues and solutions are identified through hackathons.

Cultivation of Catalysts and Facilitators

Catalysts and facilitators are nurtured through training programs by 52g, an open innovation group of GS Group. Through these, GS Energy discovers problems in the field, comes up with various projects, and develops and implement solutions.

Training

Classification	Unit	2019	2020	2021
Number of trainees	persons	135	152	164
Total training cost*	KRW million	528	275	276
Training cost per person	KRW million/person	3.91	1.81	1.68

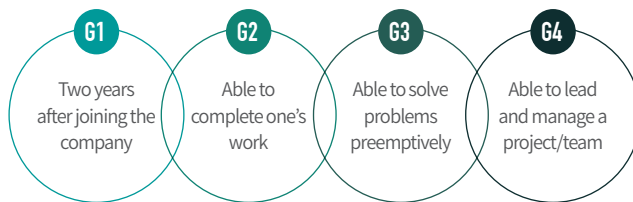
* Total training cost: all costs earmarked for education and training accounts (excluding new employees)

Optimized Employee Experience

HR System

Personnel Management System

GS Energy is pursuing the implementation of HR systems based on roles and collaboration. For this, job ranks are set on the basis of roles and promotions are granted after candidates' readiness to assume higher-level roles are evaluated from various angles, rather than simply based on seniority and performance.



Job Titles

All employees are addressed as "manager" for the purpose of fostering a horizontal culture at GS Energy. Job ranks are classified on the basis of roles, and evaluations, rewards, and promotions are aligned with the explicit expectations for the roles.

Promotions

Candidates are evaluated from various angles based on whether they are "ready to perform a higher role," rather than on seniority and performance.

Evaluation & Compensation

Employees' performances are managed and evaluated through absolute evaluations based on regular/360-degree/observational criteria rather than relative evaluations of annual goals. The company pays fair and competitive compensation in proportion to roles and recognizes and rewards various contributions.

Performance Evaluations and Compensation

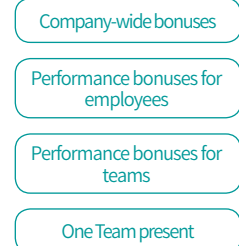
GS Energy aligns the growth of the organization with the growth of individual employees so that its employees can experience various roles along with business expansion and build up practical expertise and influence.

Performance Management Process



Employees voluntarily set their own goals aligned with the goals of the organization, and are able to grow by continuously exchanging feedback with superiors and colleagues. Each goal can be created or closed at any time of the year. Closed goals and performances are recorded together with reviews by supervisors and colleagues. Year-round goals are evaluated in comprehensive absolute terms by considering objective output and expectations compared to competency, and these are absolute evaluations. For promotions, candidates go through comprehensive evaluations that include performance vs. expected roles, and peer reviews. There are no restrictions on promotions except that two years of stay are required for each job position.

Compensation system



We provide various incentives from the perspective of collaboration and compensation for organizations. In addition to company-wide bonuses, we offer incentives, such as performance bonuses for individuals and teams, and the One Team present to express mutual appreciation for collaboration.

Communication among Employees

GS Energy listen to the voices of its members and has built a strong community based on the "One Team" spirit.

Communication with the Management

The company holds regular companywide business briefings every year to share performances and directions for growth. We also hold various communication events where the CEO and the heads of divisions have candid talks about various topics.

GSE Round (Labor-Management Council)

The GSE Round is a labor-management council of GS Energy. Management communicates and forms consensuses with the representatives of employees on various issues, such as management status, the work environment and system improvements. As such, the GSE Round contributes to healthy development and communication within the company.

Change Leaders

Change Leaders are part of a suggestion system whereby any employees can raise issues relating to various topics, such as systems, the environment and ways of work, and make suggestions for improvement.

Employees' Clubs

The company provides support to its employees so they can enjoy hobbies and pursue various interests at their workplace and create networks.

Optimized Employee Experience

Human Rights Management

GS Energy will aggressively implement human rights management across the company in compliance with the Charter of Human Rights of GS Group.

The Charter of Human Rights of GS Group

[Purpose]

GS Group affiliates declare the Charter of Human Rights for the purpose of actively implementing human rights management, preventing human rights violations and mitigating such risks associated with business operations. GS Group affiliates shall comply with international standards and guidelines related to human rights and labor, such as the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, the Fundamental Conventions of the International Labor Organization, and the OECD Due Diligence Guidance for Responsible Business Conduct.

[Scope of Application]

The Charter of Human Rights applies to the executives and employees (both regular and non-regular) of all GS Group affiliates (including GS Corp., its subsidiaries and sub-subsidiaries). In the event that any provision of this Charter conflicts with the laws of a host country, the former takes precedence. In addition, affiliates may choose to follow their own regulations on human rights over the Charter of Human Rights. However, they are encouraged to voluntarily comply with this Charter of Human Rights to the extent that their autonomous management is not compromised.

[Basic Principles]

1. Prohibition of Discrimination

GS Group affiliates do not discriminate against any executives or employees without justifiable cause by reason of gender, race, ethnicity, nationality, religion, disability, age, family, social status, or political opinion in the course of employment, including recruitment, hiring, promotion, education, salary or welfare. In addition, affiliates foster an organizational culture of respect for the diversity of executives and employees.

2. Compliance with Labor Conditions

GS Group affiliates comply with the statutory working hours of host countries where they have business operations, and pay reasonable salaries, along with pay stubs, to all employees in return for their labor. Furthermore, we provide sufficient opportunities for learning and a work environment suitable for performing duties so that all employees can develop their capabilities and improve their quality of life.

3. Humane Treatment

GS Group affiliates respect the privacy of all executives and employees, thoroughly protect their personal information, and do not engage in coercion, abuse, or unreasonable treatment, either mentally or physically.

4. Guaranteed Freedom of Association and Collective Bargaining

GS Group affiliates respect the labor laws of host countries to which this Charter of Human Rights applies, and provide sufficient communication opportunities to all executives and employees.

5. Prohibition of Forced / Child Labor

GS Group affiliates do not force any executives or employees to work against their free will by means of violence, intimidation, or confinement, or by demanding their ID cards or visas. Furthermore, child labor is prohibited in principle, and under-aged persons shall not be denied learning opportunities due to work.

6. Guarantee of Occupational Safety

GS Group affiliates inspect facilities, equipment, and tools at their business sites on a regular basis to ensure all employees work in a safe environment, and we support the follow-up management of measures to prevent physical and mental risks.

7. Human Rights Protection for Local Residents

All executives and employees of GS Group affiliates take caution not to infringe upon the human rights of local residents when performing their duties, and protect the rights of local residents to safety, health and freedom of residence.

8. Human Rights Protection for Customers

When providing products and services, all executives and employees of GS Group affiliates put the highest priority on the protection of the lives, health, and property of customers and make the utmost efforts to protect personal information collected in the course of business operations.

[Human Rights Risk Management System]

All GS Group affiliates (including GS Corp., its subsidiaries and sub-subsidiaries) evaluate and improve human rights risks and share the results with stakeholders on a regular basis.

All affiliates may designate an organization or a person responsible for human rights management, and that person or organization can establish and implement a human rights risk management system.



Grievance Handling Process

GS Energy operates a two-track process to handle grievances: 1) grievances reported directly through the hot line, 2) grievances reported to the grievance handling committee composed of selected employees. Other than these official channels, employees can also report grievances through meetings, the GSE Round, or e-mail, by phone call, or in writing. Once a grievance case is reported, an investigation is immediately started and expedited to resolve the case as soon as possible. Any violations that cannot be resolved through the grievance handling committee are forwarded to the personnel committee/discipline committee and resolved according to our internal regulations. Given their gravity, sexual harassment and workplace bullying are handled with confidentiality according to strict processes and policies.

Grievance Handling

Classification	Unit	2019	2020	2021
Grievance cases reported	cases	0	0	0
Grievance cases resolved		0	0	0

Human Rights Education

GS Energy provides education courses to all executives and employees every year to enhance their awareness of human rights. For instance, at least once a year we provide an education course to improve awareness of persons with disabilities and thus foster a positive, healthy corporate culture, and an education course to prevent workplace bullying and sexual harassment so as to create a safe and happy workplace. Furthermore, an additional course on the prevention of workplace bullying and sexual harassment is provided to employees in managerial positions for the purpose of enhancing their understanding of relevant laws and organizational management. In addition, we post the "Guidelines to Prevent Workplace Bullying" through our groupware, whereby our employees are notified of procedures and standards to help them prevent and handle such violations with the goal of creating a safe work environment.

Contribution to the Development of Local Communities

CSR Promotion System

CSR System



Charity Activities

GS Energy is committed to contributing to the development of local communities through sharing and volunteering based on its capabilities and resources, and to becoming a socially responsible corporate citizen fulfilling the CSR vision of GS Group. We contributed KRW 173 million in 2021 and will continue our donations and sponsorship to grow in harmony with local communities.

Total contributions

KRW 173.15 million

Donations made in 2021

Area	Recipient	Amount (KRW)	Note
Energy and Eco-friendliness	National Assembly Forum on Climate Change	25 million	-
Support for local communities	Habitat for Humanity Korea 815 Run	8.15 million	-
	Donations for COVID-19 relief (Long An, Vietnam)	120 million	100,000 USD
Culture and Arts	National Museum of Modern and Contemporary Art	10 million	two years (KRW 20 million) made in a lump sum in 2020
	Friends of the National Museum of Korea	10 million	-

Major CSR Activities

Energy and Eco-friendliness

National Assembly Forum on Climate Change

This forum provides a venue for healthy discussions among various stakeholders on climate change issues, raises public awareness of climate change across society, and seeks solutions at a national level. By sponsoring this forum, GS Energy is striving to respond to climate change, address issues and provide an eco-friendly environment to our society.

Support for Local Communities

Habitat for Humanity Korea 815 Run

The "2021 Virtual 815 Run" is a campaign to promote the significance of Korea's Liberation Day, express gratitude for independence activities, and convey the positive message of "It will be all right, Korea!" Funds raised through this campaign are used for home improvements for the descendants of independence activists.

Culture and Arts

National Museum of Modern and Contemporary Art

GS Energy sponsors performances, exhibitions, and artists, contributing to expanding the base of culture and arts and consolidating the status of the National Museum of Modern and Contemporary Art as a cultural icon of Korea.

Donations for COVID-19 Relief

As the COVID-19 pandemic spread rapidly, with soaring infections in Long An, Vietnam, GS Energy made donations through its Vietnamese partner, VinaCapital, to the Long An government.

Friends of the National Museum of Korea

GS Energy is making continuous efforts to publicize and conserve Korea's history and culture through the following activities: 1) museum sponsorship, such as the purchase and donation of relics, academic research, exhibitions, and education, 2) public education for citizens, 3) external cooperation with museum sponsor groups at home and abroad.

CORPORATE GOVERNANCE

Sound Corporate Governance

Board of Directors	41
Audit System	41

Advanced Risk Management

Ethics and Compliance Risks	42
Financial Risk	43
Information Security Risk	44

Sound Corporate Governance

Board of Directors(BOD)

Roles of the BOD

The Board of Directors supports management in the conduct of responsible governance and demands corrections of problems with management standards, procedures, or methods, if any, so as to ensure reasonable management activities. The BOD makes resolutions on agenda items delegated by the general meeting of shareholders and important matters related to the basic management policies and business operations of the company, and supervises the work performance of the directors and the management.

BOD Composition

GS Energy ensures independence, diversity and expertise in the composition of the BOD. To secure the independence of the BOD, all directors are elected at the general meeting of shareholders from among candidates who are qualified in accordance with relevant laws and regulations. The chairperson of the BOD is elected in consideration of experience and expertise in the energy business, and as of March 2022, the BOD consisted of one executive director and CEO and four other non-executive directors.

BOD Composition

(as of March 2022)

Classification	Name	Term of Office	Major career/role
Executive director (CEO)	Huh Yong-soo	Mar. 14, 2025	CEO, BOD Chairman Lead overall business management
Non-executive director	Huh Jun-hong	Mar. 11, 2023	CEO of Samyang Tongsang Overall business management
	Hong Soon-ki	Mar. 19, 2024	CEO of GS Corp. Overall business management
	Huh Se-hong	Mar. 14, 2025	CEO of GS Caltex Overall business management
	Jung Chan-soo	Mar. 14, 2025	CEO of GS EPS Overall business management

BOD Operation

GS Energy operates its BOD in accordance with BOD operation regulations. The BOD chairperson can convene BOD meetings and sets the date, which shall be notified to all directors in writing or verbally at least 12 hours in advance. BOD meetings may also be held if agreed by all directors, in which case the aforementioned procedure does not apply. In 2021, a total of 15 BOD meetings were held to discuss 50 agenda items. The attendance rate was 98.89%.

Board of Directors

Classification	Unit	2019	2020	2021
Number of meetings	meetings	11	15	15
Number of resolution items	items	22	35	50
Attendance rate	%	100	97.78	98.89

BOD Performance Evaluation and Compensation

The BOD establishes the remuneration policy for key executives in line with shareholders' interests and the long-term interest of the company and transparently discloses the details. The activities of the executive director within the BOD are evaluated through objective and comprehensive criteria, including quantitative indicators, leadership, core competencies, and other contributions to the company.

BOD Remuneration

(Unit: KRW million)

Classification	Number of people	Total remuneration	Remuneration per person
Registered directors	1	1,807	1,807

Audit System

Internal Audits

GS Energy appoints a person who is qualified under the Commercial Act as an internal auditor and conducts audits of financial statements and evaluations of the design and operation of the internal accounting management system. Furthermore, we provide training every year to enhance the expertise of the auditor, and raise the efficiency of auditing work with support from the Accounting Team for the internal accounting management.

Training of Auditors

Date	Training institute	Main contents
Jun. 30, 2021	Korea Listed Companies Association	Internal accounting management system and the roles of auditors
May 31, 2020	Korea Exchange	Prevention of unfair transactions
Nov. 1, 2019	Outside instructor	Background of the internal accounting management system and relevant regulations
Apr. 3, 2019	Deloitte Anjin	Establishment and operation of the internal accounting management system
Jan. 29, 2019	Accounting Team	Revision of the Act on External Audit of Stock Companies and the internal accounting management system

External Audits

GS Energy ensure the fairness and transparency of accounting information through regular audits by an independent, external auditor. Its external auditor and internal auditor discuss the audit plan, independence, external audit results, etc., on a regular basis. In 2021, the audit opinion was "Unqualified" and there were no issues pointed out in the audit results.

Audit Opinion

Classification	Auditor	Audit opinion	Note
2019	KPMG Korea	Unqualified	None
2020	KPMG Korea	Unqualified	None
2021	KPMG Korea	Unqualified	None

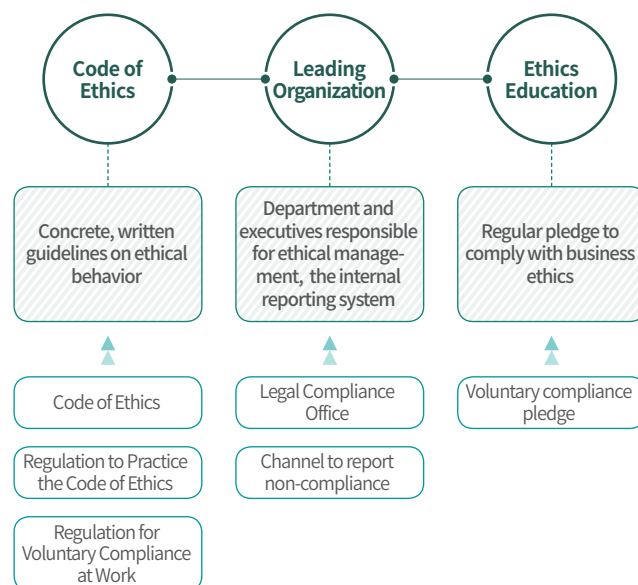
Advanced Risk Management

Ethics and Compliance Risk

GS Energy has established and operates a compliance management system to prevent various non-compliance risks that may arise in the course of business operations, such as violations of the Fair Trade Act or misconduct.

Ethics and Compliance Risk Management System

For company-wide ethical management, GS Energy has established the Code of Ethics and guidelines on ethical behavior to be followed by all executives and employees. We carry out activities to practice compliance management, such as operating channels to receive reports on non-compliance and to handle grievances, and collect a pledge of voluntary compliance from executives and employees.



Code of Ethics



The Code of Ethics of GS Energy

Chapter 1. Management for Customer Satisfaction

We recognize that customers form the foundation for the profits and growth of the company and provide the genuine value customers want, thereby realizing customer satisfaction.

Chapter 2. Coexistence and Co-prosperity with Suppliers

We build mutual trust and cooperative relationships with our suppliers through transparent and fair transactions.

Chapter 3. Respect for Employees and Compliance with Basic Ethics

The company and its employees fulfill their obligations for mutual growth and development based on trust and respect.

Chapter 4. Protection of Shareholder's Interests

We protect the interests of shareholders through efficient and transparent management activities so that shareholders can invest in the company with confidence.

Chapter 5 Contributions to the Country and Society

As a corporate citizen, we comply with government policies and laws and fulfill our social responsibilities.

Chapter 6 Environmental, Health, and Safety Management

We make the utmost efforts to protect the environment and pursue an accident-free workplace.

Ethical Management Tools

Direct Reporting Channel

GS Energy operates direct reporting channels (e-mail, telephone) through which its stakeholders, including employees, customers and suppliers, can report corruption, such as misconduct by employees or unfair transactions with suppliers.

Grievance Handling Channel

GS Energy also operates a grievance handling channel whereby anyone who has fallen victim to a human rights violation or discovered the risk of such may make a report. Human rights violations such as workplace harassment or sexual harassment can be reported via a direct telephone line.

Whistleblower Protection

Upon receiving a report of non-compliance or a grievance, the department in charge takes responsibility for protecting the whistleblower from any potential disadvantages and ensures confidentiality.

Pledge of Voluntary Compliance

GS Energy collects a pledge of voluntary compliance from all executives and employees in order to promote a corporate culture of ethics and compliance. By signing the pledge, all members of GS Energy promise to comply with and take responsibility for corporate regulations, the Code of Ethics, and fair trade laws in the course of performing their duties.

GS Energy has put in place a compliance management system to prevent various non-compliance risks that may arise from business operations, such as violations of the Fair Trade Act or misconduct.

Violations of Ethical Management

Classification	Unit	2019	2020	2021
Violation	Cases	0	0	0

Advanced Risk Management

Financial Risk

GS Energy defines liquidity risk, financial market fluctuation risk such as interest rates and FX rates, credit rating risk, and internal control risk as financial risks, and reviews and implements a variety of measures optimized for coping with them.

Liquidity Risk Management

To manage liquidity risk, GS Energy thoroughly forecasts its balance of funds and maintains liquidity at a stable level by maintaining appropriate cash reserves. Furthermore, we have secured credit lines higher than the level of appropriate cash reserves so as to prepare for contingencies. The company also makes continuous efforts to diversify its borrowing portfolio by reviewing and implementing a variety of financing schemes, and thus seeks to minimize refinancing risk in the event of a financial crisis caused by unpredictable financial market fluctuations.

In particular, GS Energy preemptively monitors various movements in the financial market associated with the growing importance of ESG management, and preemptively manages potential risks. We also analyze the impact that ESG-related policies of the government and financial institutions may have on our financing and put in place countermeasures across all areas of investment and business operations.

Financial Market Fluctuation Risk Management

GS Energy constantly monitors key financial indicators in order to make timely responses to risks arising from volatility in financial markets, such as interest and FX rates. The company closely analyzes the causes of financial market fluctuations and preemptively identifies future movements so as to come up with optimized responses and minimize the impact on its business plans. We adjust the proportions of fixed/floating interest rates on borrowings in consideration of the risk of interest rate fluctuations, and optimize hedging against potential FX rate risks based on a thorough analysis of our FX positions.

Credit Rating Risk Management

GS Energy aims to maintain a stable credit rating to win the confidence of investors and customers. In order to minimize negative impacts on our credit rating, mid- to long-term financial ratios are verified as a part of the decision-making process of the top management during the deliberation and approval of business and investment plans. We implement systematic measures to maintain adequate financial ratios, including detailed scenario-based analyses of how our borrowings are affected by various factors, such as the direction of the company and changes in the financial market.

Internal Control Risk Management

GS Energy operates an internal accounting management system in accordance with relevant laws and promotes transparency and reliability across its financial reporting processes, from the calculation to the disclosure of financial information. By adopting reasonable and consistent accounting policies, we provide objective information for investment decision-making.

Investment Risk

Investment Risk Management System

GS Energy operates its Investment Deliberation Committee to manage investment risks. Established with the goal of coping with the fast changing business environment and the volatility of different industries, the committee reviews the economic feasibility of investment projects and their alignment with the directions of the company's investment portfolio, and examines the feasibility of financing schemes and risks associated with investment structures. GS Energy minimizes financial risks by mandating approval from the Investment Deliberation Committee for any investment or disposal of assets worth KRW 5 billion or more.

Investment Deliberation Process



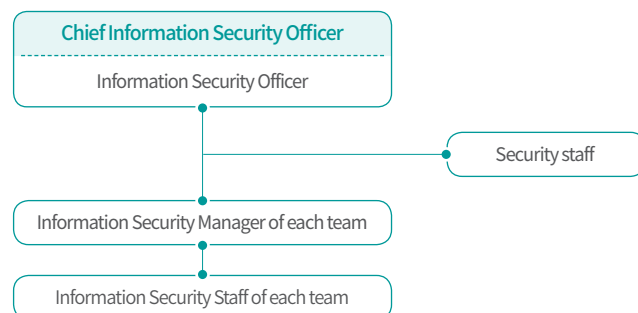
Advanced Risk Management

Information Security Risk

As information security breaches, such as cyberattacks and hacking, are on the rise along with the digital transformation, GS Energy recognizes the importance of reinforcing information security management and is taking preemptive actions to establish an information protection system.

Information Security Risk Management System

GS Energy operates an information security management system in accordance with its internal regulations, and conducts annual inspections of information protection and takes appropriate improvement measures.



- Compliance with legal requirements such as the Personal Information Protection Act
- The information security manager of each team and security staff review and archive records of personal information use and destruction.

Pledge of Information Protection

GS Energy collects a pledge to comply with internal regulations on information protection from all executives and employees.

1. I will keep the confidentiality of the business information, technical information, management information, and trade secrets of the company and any other information of economic value, and will not use them for any purposes other than performing my duties.
2. In order to protect confidential information, I will not bring in unauthorized equipment or software without the approval of the company.
3. In order to protect confidential information, I hereby agree to the information security department gathering and searching information of the company.
4. Upon retirement, I will return the originals and copies of all confidential information I have managed along with my ID card to the company.
5. I will not illegally bring any information managed as confidential by a third party into the company. I will not leak confidential information of third parties for which the company has an obligation to maintain confidentiality nor use such information for purposes other than performing my duties.
6. I will comply with all regulations and work instructions related to the information security of the company.

Information Security Education for Employees

GS Energy provides education courses on information security, including privacy protection, to new hires and the employees of suppliers once a year.

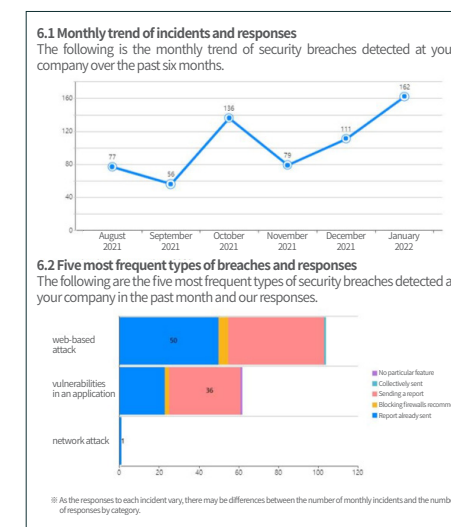
Education on Information Security

Classification	Unit	2019	2020	2021
Training hours	hours	142	155	169
Number of trainees	persons	142	155	169

Technical Safeguards

GS Energy uses firewalls to block all penetration paths for external service provision other than the DMZ*, and the DMZ is controlled by a specialized information protection agency. Furthermore, we monitor internal data taken out from the company and respond to security breaches, such as ransomware, by operating a backup system and conducting simulation drills for disaster recovery. When building a new external system, we conduct simulated hacking to verify its robustness.

* DMZ(Demilitarized Zone): a zone where access is restricted between the internal network and the external network to protect internal resources when services are provided to the outside



Cases of Data Leakage/Theft/Loss

Classification	Unit	2019	2020	2021
Privacy	cases	0	0	0
Corporate data	cases	0	0	0

APPENDIX

Financial Performance	46
GRI Standards Index	47
Independent Assurance Statement	49

Financial Performance

Summary of Consolidated Financial Statement

(Unit: KRW million)

Classification	2019	2020	2021
Assets	9,170,629	8,939,584	13,132,764
Current assets	700,476	734,198	1,495,872
Non-current assets	8,470,153	8,205,386	11,636,892
Liabilities and capital	9,170,629	8,939,584	13,132,764
Liabilities	3,345,252	3,273,745	5,404,042
Current liabilities	720,511	797,791	1,237,178
Non-current liabilities	2,624,741	2,475,954	4,166,864
Capital	5,825,377	5,665,839	7,728,722
Shares held by holding company	5,800,597	5,339,132	6,795,278
Non-controlling interest	24,780	326,707	933,444

Summary of Consolidated Income Statement

(Unit: KRW million)

Classification	2019	2020	2021
Revenue and equity method income	2,406,927	1,641,866	3,769,589
Gross profit	1,389,401	392,794	1,964,360
Operating profit	1,338,897	341,598	1,866,115
Net income before tax	1,284,735	291,666	1,947,592
Net income (loss)	290,762	(238,747)	912,613
Shares held by holding company	285,664	(250,703)	889,989

GRI Standards Index

Universal Standards (GRI 100)				
Classification	Disclosure	Index	Page listed	Remarks
102. General Disclosures	Organization profile	102-1 Name of the organization	6	
		102-2 Activities, brands, products, and services	8	
		102-3 Location of headquarters	6	
		102-4 Location of operations	6	
		102-5 Ownership and legal form	6	Refer to the business report
		102-6 Markets served	8~14	
		102-7 Scale of the organization	6	
		102-8 Information on employees and other workers	6, 36	
		102-9 Supply chain	-	Not applicable (holding company)
		102-10 Significant changes to the organization and its supply chain	9	
		102-11 Precautionary Principle or approach	22, 42~44	
		102-12 External initiatives	-	No Initiatives joined
		102-13 Membership of associations	7	
	Strategy	102-14 Statement from senior decision-maker	3	
		102-15 Key impacts, risks, and opportunities and integrity	22	
	Ethics and Integrity	102-16 Values, principles, standards, and norms of behavior	42	
		102-17 Mechanisms for advice and concerns about ethics	42	
	Governance	102-18 Governance structure	16, 41	
		102-19 Delegating authority	16	
		102-20 Executive-level responsibility for economic, environmental, and social topics	16	
		102-21 Consulting stakeholders on economic, environmental, and social topics	16	
		102-22 Composition of the highest governance body and its committees	41	
		102-23 Chair of the highest governance body	41	
		102-24 Nominating and selecting the highest governance body	41	
		102-26 Role of highest governance body in setting purpose, values, and strategy	16	
		102-27 Collective knowledge of highest governance body	41	
		102-28 Evaluating the highest governance body's performance	41	

Universal Standards (GRI 100)				
Classification	Disclosure	Index	Page listed	Remarks
102. General Disclosures	Governance	102-29 Identifying and managing economic, environmental, and social impacts	16	
		102-30 Effectiveness of risk management processes	16	
		102-31 Review of economic, environmental, and social topics	16	
		102-32 Highest governance body's role in sustainability reporting	16	
		102-33 Communicating critical concerns	16	
		102-34 Nature and total number of critical concerns	17~18	
	Stakeholder Engagement	102-40 List of stakeholder groups	20	
		102-41 Collective bargaining agreements	37	
		102-42 Identifying and selecting stakeholders	20	
		102-43 Approach to stakeholder engagement	20	
		102-44 Key topics and concerns raised through stakeholder engagement	20	
	Reporting practices	102-45 Entities included in the consolidated financial statements	6	
		102-46 Defining report content and topic Boundaries	2	
		102-47 List of material topics	17~18	
		102-48 Restatements of information	-	Not applicable (first publication)
		102-49 Changes in reporting	-	Not applicable (first publication)
		102-50 Reporting period	2	
		102-51 Date of most recent report	-	Not applicable (first publication)
		102-52 Reporting cycle	2	
		102-53 Contact point for questions regarding the report	2	
		102-54 Claims of reporting in accordance with the GRI Standards	17~18	
		102-55 GRI content index	47~49	
		102-56 External assurance	50~51	
	103. Management Approach	103-1 Explanation of the material topic and its boundary	18	
		103-2 Management approach and its components	18	
		103-3 Evaluation of the management approach	18	

GRI Standards Index

Economic Performance (GRI 200)

Classification	Disclosure	Index	Page listed	Remarks
201. Economic performance	201-1	Direct economic value generated and distributed	19	
	201-2	Financial implications and other risks and opportunities due to climate change	22	
	201-3	Defined benefit plan obligations and other retirement plans	35	
203. Indirect economic impacts	203-1	Infrastructure investments and services supported	39	
	203-2	Significant indirect economic impacts	19, 39	
205. Anti-corruption	205-1	Operations assessed for risks related to corruption	42	
	205-2	Communication and training about anti-corruption policies and procedures	42	
	205-3	Confirmed incidents of corruption and actions taken	42	
206. Anti-competitive behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	42	

Environmental Performance (GRI 300)

Classification	Disclosure	Index	Page listed	Remarks
302. Energy	302-1	Energy consumption within the organization	28	
	302-2	Energy consumption outside of the organization	28	
	302-4	Reduction of energy consumption	28	
	302-5	Reductions in energy requirements of products and services	27~28	
303. Water and effluents	303-1	Interactions with water as a shared resource	30	
	303-2	Management of water discharge-related impacts	30	
	303-3	Water withdrawal	30	
	303-5	Water consumption	30	
305. Emissions	305-1	Direct (Scope 1) GHG emissions	28	
	305-2	Energy Indirect (Scope 2) GHG emissions	28	
	305-5	Reduction of GHG emissions	27~28	
	305-7	Nitrogen oxides(NOx), sulfur oxides(SOx), and other significant air emissions	31	
306. Waste	306-3	Waste generated	30	
	306-4	Waste diverted from disposal	30	
	306-5	Waste directed to disposal	30	

Environmental Performance (GRI 300)

Classification	Disclosure	Index	Page listed	Remarks
307. Environmental Compliance	307-1	Non-compliance with environmental laws and regulations	18	
308. Supplier Environmental Assessment	308-2	Negative environmental impacts in the supply chain and actions taken	32	

Social Performance (GRI 400)

Classification	Disclosure	Index	Page listed	Remarks
401. Employment	401-1	New employee hires and employee turnover	36	
	401-3	Parental leave	35	
404. Training and Education	404-2	Programs for upgrading employee skills and transition assistance programs	36	
	404-3	Percentage of employees receiving regular performance and career development reviews	37	
405. Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	36	
	405-2	Ratio of basic salary and remuneration of women to men	36	
406. Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	38	
412. Human Rights Assessment	412-1	Operations that have been subject to human rights reviews or impact assessments	38	
	412-2	Employee training on human rights policies or procedures	38	
413. Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	39	
418. Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	44	
419. Socioeconomic Compliance	419-1	Non-compliance with laws and regulations in the social and economic area	42	

Independent Assurance Statement

To readers of GS Energy Sustainability Report 2021

Introduction

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

Scope and Standards

GS Energy described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type 1, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team. Confirmation that the Report was prepared in accordance with the Core Options of the GRI standards was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process.

- GRI Sustainability Reporting Standards
- Universal standards
- Topic specific standards
 - Management approach of Topic Specific Standards
 - GRI 201: Economic Performance
 - GRI 205: Anti-Corruption
 - GRI 302: Energy
 - GRI 303: Water and Effluents
 - GRI 305: Emissions
 - GRI 306: Effluents and Waste
 - GRI 401: Employment
 - GRI 404: Training and Education
 - GRI 412: Human Rights Assessment

As for the reporting boundary, the engagement excludes the data and information of GS Energy's partners, suppliers and any third parties.

KMR's Approach

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

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

Limitations and Recommendations

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

Conclusion and Opinion

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

Inclusivity

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

Materiality

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

Responsiveness

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

Impact

GS Energy identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

Competence and Independence

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

April 2022 Seoul, Korea



SRV1000
Sustainability Committee Assurance



AA1000
Licensed Report
000-129/VS-X6VDO

CEO E. J. Hwang



Contributions by

Supply & Trading Team	Gu Eun-ji
SMR Team	Kim Chul-min
Upstream Business Team	Gang Jeong-gil
Gas Infrastructure Team	Yoon Sang-kyung
Corporate Planning Team	Sohn Seok-cheol
Corporate Relations Team	Kim Tae-hyung, Yoon Ji-soo
Legal Compliance Office	Kim Yeon-ju, Shin Ha-young
New Business Development Team	Kim Hyeong
Corporate Strategy Team	Kwon Ji-hee
Petrochemical Business Team	Jung Ji-yoon
Hydrogen Business Team	Lee Jin-hyun
HR Team	Choi Sang
Finance Team	Hong Seo-yeon
Renewable Energy Development Team	Kim Do-hyung, Yeom Won-shik
New Power Business Development Team	Choi Min-ji
Corporate Culture Design Team	Kim Ki-jong
Overseas Power Business Task Force	Choi Jeong-song
Overseas Fund Investment Team	Yeon Kyu-min
Accounting Team	Jeong Seung-hwa



For this report, we used FSC[™] (Forest Stewardship Council[™]) certified paper that has been sourced and managed in a socially responsible and economically viable manner. And this report paper was printed by a company that earned an FSC[™] Chain-of-Custody certificate (Certificate No. SGSHK-COC-340194).