ESG Report

LG Energy Solution

2021

About this Report

Overview
This report has been published for the purpose of delivering annual financial and non-financial performances of LG Energy Solution to stakeholders with an emphasis on the company's strategic ESG management system. LG Energy Solution is dedicated to systematically manage the performance under ESG management strategy and to disclose ESG-related data in a transparent manner by publishing the annual ESG report both in Korean and English on the website.

Reporting principles
This report has been prepared by reflecting the Core Option of the Global Reporting Initiative (GRI) standards, and conveys the action plans to achieve the Sustainable Development Goals (SDGs). Furthermore, we considered the disclosure principles that reflect the Value Reporting Foundation Sustainability Accounting Standards Board (VRF SASB), a global ESG disclosure standard, as well as the Task Force on Climate-Related Financial Disclosure (TCFD) recommendations.

Reporting period
This report has been written based on quantitative and qualitative activities as well as achievements from January 1, 2021 to December 31, 2021. Some data is from the first half of 2022, prior to publication of this report. In terms of quantitative performance, we improved the comparability based on trends by disclosing the three year data between 2019 and 2021, which is before the corporate spin-off (from Energy Solution Company of LG Chem).

Reporting scope
This report covers the headquarters in Seoul, R&D Campuses in Daejeon, Gwacheon and Magok, and two Ochang Plants in Korea. Global business sites include all production and sales corporations in the US, China, Poland, Australia, Germany, Taiwan, and Indonesia. This report applies the K-IFRS Consolidated Financial Statement Standards for financial information. Non-financial information with a different reporting scope is indicated separately.

Report verification
The reliability of the report has been verified by the Korea Management Registrar (KMR), and the results thereof are listed page 96.

This report was prepared by:
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Report

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Company Overview

LG Energy Solution is a global battery company specialized in offering a wide range of energy solutions for a better world. We lead the future energy industry by developing advanced automotive batteries that contribute to the popularization of electric vehicles (EVs) that are environmentally friendly; mobility and IT batteries that leverage wireless innovation overcoming the boundaries and limitations in terms of sizes and shapes; and unlocking the smart grid era by providing various ESS battery products.

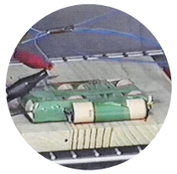
Founded In	December 2020
CEO	Youngsoo Kwon
Headquarters	Parc 1 Tower 1, 108 Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
Business Details	Automobile battery, Mobility & IT battery, ESS battery
Website	www.lgensol.com

LG Energy Solution, which started researching lithium-ion batteries in 1992 and split-off from Energy Solution Company of LG Chem in December 2020, continues to grow as a global battery company. Based on our advanced technology and experience, we are recognized as an unrivaled leader in the lithium-ion battery market, and we are leading the future energy industry with our automotive batteries, IT and new application, and ESS batteries, which are critical elements in leading the era of green energy.

LG Energy Solution Corporate History

1992
Commenced lithium-ion battery research

1996
Initiated lithium-ion battery



1999
Initiated cylindrical lithium-ion battery mass production

2000
Established a research corporation in the US

2004
Completed the construction of Nanjing Plant, China

2009
Started supplying batteries to the world's first mass-produced EV (GM Volt)

2012
Completed the construction of EV battery plant in the US

2013
Developed the world's first futuristic batteries (stepped, curved, and wire batteries)

2015
Initiated ESS cell mass production

2017
Completed the construction of EV battery plant in Poland

2018
Developed the world's first freeform battery

2020.12
Launched LG Energy Solution

2020.12
Established "Ultium Cells", a joint corporation for EV batteries with GM

2021.4
First in the battery industry to join RE100 and EV100 at the same time

2021.9
Began construction of a joint battery plant with Hyundai Motor Group in Indonesia

2022.3
Established "Nextstar Energy," a joint venture for EV batteries with Stellantis

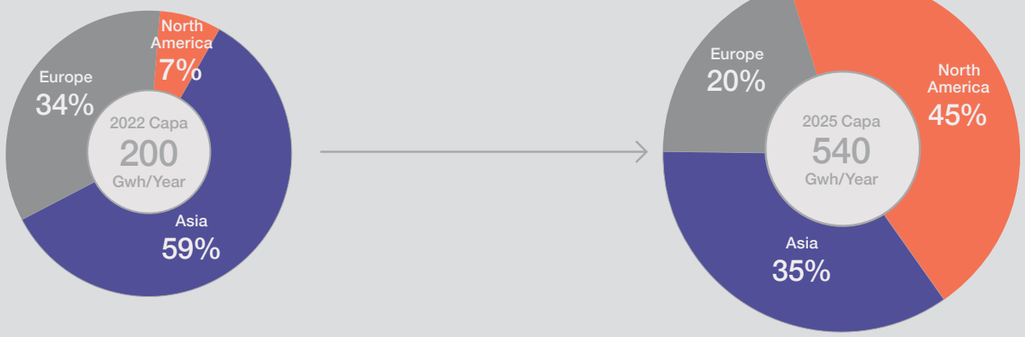
Global Business Network

LG Energy Solution established global networks not only in Korea but also in China, the US, and other major countries, with over 28,000 employees working in the respective business sites to expand its R&D, production, and sales bases globally.

Headquarters | Production | R&D | Sales

- Automobile Battery
- Mobility & IT battery
- ESS Battery

Expected capacity for 2022 and long-term capacity plan for 2025



Business Portfolio

Automobile battery

LG Energy Solution is contributing to the commercialization of EVs with its world-best technology-intensive battery products. We have improved battery stability and offer a diverse product portfolio of cells, modules, and packs based on our exceptional material competitiveness.

Application

Battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), hybrid electric vehicles (HEVs), etc.

Mobility & IT battery

Since successfully developing Korea's first lithium-ion batteries in 1999, LG Energy Solution has been leading the wireless innovation of laptop computers, electric tools, and vacuum cleaners.

Pouch
Ultra-slim / High density
/ Size diversification

Cylindrical
High energy density / High output power
/ Standardized size

Freeform
High energy density
/ Maximum space utilization
/ Optimized battery design

Application

IT devices, electric tools, LEV(Light Electric Vehicle), etc.

ESS battery

LG Energy Solution is ushering in the smart grid era by enhancing energy efficiency and stabilizing the renewable energy system with high-capacity and extended lifespan ESS batteries.

Application

Domestic ESS, grid/commercial ESS, back-up power solution

Financial Performance

Financial information

Energy Solution	2nd term (current)	1st term (previous)
Sales amount	17,851,906	1,461,068
Operating profit (loss)	768,470	(475,206)
Assets	23,764,137	19,941,795

The company was founded on December 1, 2020, which is why the sales and operating profit for the first term are written as of December 2020 (one month).

(Unit: KRW million)

Sales performance

Sales type	Item		2nd term	1st term
Products Services	EV battery, ESS battery, mobility & IT battery, etc.	Export	12,639,364	1,185,361
		Domestic	5,212,542	275,707
		Total	17,851,906	1,461,068

The company was founded on December 1, 2020,
which is why the amounts for the first term are written as of December 2020 (one month).

(Unit: KRW million)

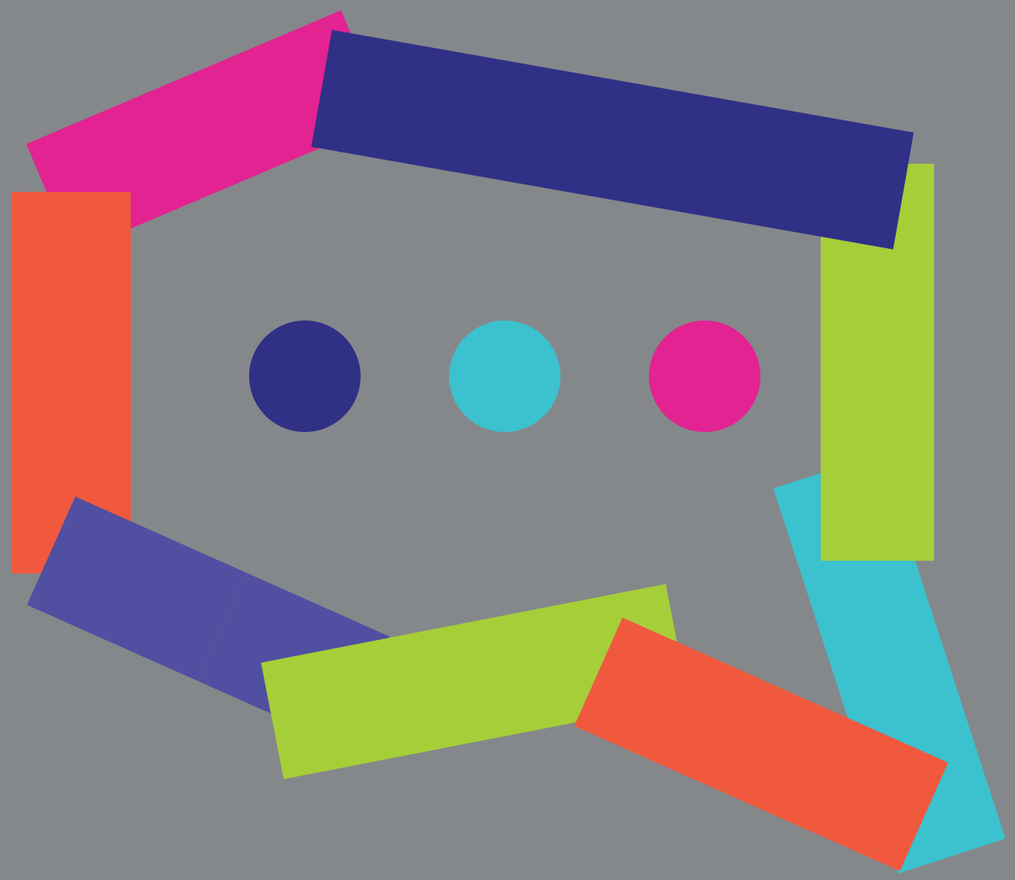
Consolidated income statement

	2nd term	1st term
Sales	17,851,906	1,461,068
Cost of sales	13,953,123	1,237,020
Gross margin	3,898,783	224,048
Sales and administrative expenses	3,130,313	699,254
Operating profit (loss)	768,470	(475,206)
Financial revenues	339,996	28,840
Financial expenses	295,258	138,843
Equity method net profit	(11,556)	1,206
Other non-operating income	465,006	52,215
Other non-operating expense	489,474	73,066
Net income (loss) before income tax	777,184	(604,854)
Income tax revenues	76,523	(147,345)
Profit (loss) from continuing operations	700,661	(457,509)
Profit (loss) from discontinued operations	229,207	5,738
Net income (loss)	929,868	(451,771)
Attribution of net income (loss)		
Proprietary equity of governing company	792,519	(455,515)
Profit (loss) from continuing operations	607,343	(460,147)
Profit from discontinued operations	185,176	4,632
Non-controlling interest	137,349	3,744
Profit from continuing operations	93,318	2,638
Profit from discontinued operations	44,031	1,106
Profit (loss) per share for the proprietary equity of governing company		
Basic and diluted operating profit (loss) per common share (in KRW)	3,963	(2,278)
Basic and diluted profit (loss) from continuing operations per common share (in KRW)	3,036	(2,301)

2nd term January 1, 2021 – December 31, 2021 **1st term** December 1, 2020 – December 31, 2020

(Unit: KRW million)

02



ESG Story

Batteries are used in almost every aspect of our lives, and their significance is linked to the environmental, social and governance (ESG) category. They make a substantial contribution to the efficient use of electricity and growth of renewable energy, while also freeing humans from the plug and granting us mobility and space. LG Energy Solution will contribute to a better future by reducing unnecessary elements and replacing them with necessary ones in each ESG area, just as how batteries create energy in the cycle of positive and negative poles and bring new value to life.

Leading the industry through our valued customer's trust and respect

Dear stakeholders of LG Energy Solution,

LG Energy Solution is a pioneer of Korea's rechargeable battery industry and is growing as a company with an unparalleled competitive edge in global market. Following the successful IPO in January 2022, we set out on a journey for the next 100 years, and we are gearing up for leading sustainable growth of the global battery industry.

“Battery,” by nature, is closely related to the concept of “eco-friendliness” and is a key driver to sustainable life and a core industry of the future. With the ultimate goal of going “carbon negative” beyond "carbon neutral” throughout the entire business operations, LG Energy Solution will strive to take the lead in the global efforts to tackle climate change.

LG Energy Solution works to achieve carbon neutrality throughout the entire value chain, encompassing raw material sourcing, battery manufacturing, reuse and recycling of end-of-life batteries. Further, we aim to establish a perfect closed loop by 2050. In doing so, we are expanding and strengthening partnership with competitive recycling companies around the world, and building capacity to reuse and recycle batteries in an environmentally friendly manner by 2025. With the utmost principle that our employees are the most important customers, we are actively innovating our corporate culture and HR policy. We are creating a workplace environment in which a variety of talents—regardless of race, gender and disability—can join and grow together with the company through self-development under a liberated, unconstrained corporate culture. We will continue to support our talents who take on challenges and show initiative with passion to produce the best products and services, and also embed ESG in the work culture to ensure we create sustainable values beyond short-term performance.

Such efforts will be made public through transparent ESG disclosure. We plan to actively operate an ESG Committee, the highest governing body of ESG management established under the Board of Directors last year, and disclose key performances and areas of improvement in a transparent manner. Our management system offers a solid and robust foundation to do so, as we are the first in the global battery industry to acquire ISO 37301 certification for compliance management system and ISO 22301 certification for business continuity and crisis management system.

Moreover, LG Energy Solution is a signatory of UN Global Compact and committed to addressing a variety of ESG issues. We fully support the Ten Principles of the UN Global Compact and committed to fulfilling fundamental responsibilities in the areas of human rights, labor, environment and anti-corruption, and contributing to achievement of the UN Sustainable Development Goals (SDGs).

LG Energy Solution’s new and great journey to lead the industry through our valued customer's trust and respect has only just begun. We will continue to provide consumers with products of the greatest quality and, furthermore, strive to become a leader in ESG management with our mission and pride in changing the lives of mankind as the main driving force.

Youngsoo Kwon,
CEO of LG Energy Solution

ESG Focus

LG Energy Solution aims to become a leader in ESG(Environmental, Social, and Governance) management with the belief that our business growth will build a sustainable future for humankind through the battery business which is instrumental to the era of green energy.

Like the natural flow from plus to minus and vice versa, we will reduce unnecessary elements in each domain of environment, society, and corporate governance, and add necessary elements to create a better future for all. We will reduce carbon and add nature ⓔ, reduce discrimination and add responsibilities ⓢ, and reduce customary practices and add communications ⓖ, finally producing sustainable energy. Furthermore, we will remain unafraid to make new attempts with boundless potential to build a green battery ecosystem where everyone shares energy.

E

Reducing Carbon, Embracing Nature

LG Energy Solution aims to gradually reduce green-house gases emission from all global business sites, thereby achieving carbon neutrality in 2040 and carbon-negative in 2050. We were the first to join RE100 and EV100 in the global battery industry, and committed to use 100% of renewable energy and to convert 100% of owned and leased vehicles to EVs by 2030. According to the RE100 report released by CDP (Carbon Disclosure Project), LG Energy Solution's renewable energy conversion rate in 2020 was 33%, ranked number one among domestic companies. Like this, we have taken our first stride towards carbon neutrality. In order to add value to the circular economy, we will create a 'closed loop' that covers the entire supply chain from raw material acquisition, production, consumption, and disposal of batteries, and will make sure to build a system to reuse and recycle batteries. Furthermore, we will thoroughly manage the risks of the resources in the manufacturing process and continue to preserve the ecosystem of the water resources and to manage biodiversity by working closely with the local community.

ESG Highlight 01. Environment

- **Promoting carbon neutrality in all value chains by 2050**
  Achieving carbon neutrality on battery production by 2040 and achieving carbon neutrality throughout supply chains by 2050
- **Completely transitioning to renewable energy and EVs by 2030 (RE100, EV100)**
  Renewable energy transition rate for all business sites was 44% in 2021
- **Implementing 'Perfect Closed loop' for battery recycling in all business sites by 2025**
- **Acquiring 'Land fill zero' certification for all business sites by 2023**
  Acquired LGESNJ Corporation Land Fill Zero Platinum rating in 2021

S

Minimizing Discrimination, Assuming Responsibility

LG Energy Solution will create a pleasant workplace culture by uprooting discriminations according to race, nationality, gender, and disability. We will spare no effort to support talented people in reaching their dreams and show their capabilities through an organizational culture where there is diversity based on acknowledgement of difference and mutual respect, equity in treatment, and inclusion based on mutual understanding and respect.
It is impossible to single-handedly achieve our sustainable future with the independent efforts of LG Energy Solution. LG Energy Solution will comply with the international standards and regulations in accordance with ESG management principles, will reduce possible ESG risks in the entire value chain through ESG assessment and consultation support from suppliers, and will work to enhance the ESG capabilities others.
In addition, LG Energy Solution will spare no effort to fulfill its responsibilities as a member of the society and to create a better future by finding and giving support to solve social problems, thereby growing alongside our society.

ESG HIGHLIGHT 02. Social

- **Building an organizational culture based on diversity, equity, and inclusion (DEI)**
  Managing LGES 'Diversity Index (Gender, Disability, Race, Nationality)'
- **Strengthening ESG management of supply chains**
  Carrying out ESG assessment of 143 suppliers in 2022
- **Achieving carbon neutrality of supply chain**
  Promoting RE100 on Tier-1 suppliers by 2030
- **Operating shared growth investment fund with suppliers and participating in global community impact activities**

G

Reducing customs, adding communication

LG Energy Solution manages the internal compliance control system at the global standard level in response to regulations and policies that are becoming stricter around the world. In 2021, we were the first in the world's battery industry to be recognized for the process in which proactive identification and prevention of compliance risks are achieved through authentication of the ISO 37031 Global Compliance Management System. We are also strengthening the diversity and expertise of the Board of Directors (BoD) in order to establish a trusted and transparent governance system. We operate Audit Committee, Internal Transaction Committee, ESG Committee, and Outside Director Nomination Committee within the BoD, enhancing the effectiveness, expertise, and independence of the board.
LG Energy Solution is a global battery company with business sites and supply chains all around the world. As we provide products and services to various customers, we continuously update ESG reports to clearly communicate with stakeholders, and is actively responding to external ESG assessments such as CDP. In particular, we will participate in global initiatives such as RE100, RBA, and FCA to actively seek out information and support methods that will help improve and advance the global supply chain management system, and to communicate constructively, thereby solidifying our position as a global ESG leader.

ESG HIGHLIGHT 03. Governance

- **Strengthening BoD expertise and transparency (e.g., operation of ESG Committee)**
- **Advancing a company-wide 'Compliance' system**
  Being the first in the battery industry to have ISO 37301 (Compliance Management System) certification.
- **Establishing a company-wide business risk management system**
  Having ISO 22301 (Business Continuity Management System) certification
- **Participating in global initiatives like RBA, RMI, RLI, GBA, UNGC, and FCA**

"As a leader in the battery industry that promotes the use of renewable energy, we plan to complete the transition to 100% renewable energy in all manufacturing sites by 2025 and in all non-manufacturing facilities by 2030."
Sung hoon Lee, ESG Impact Team

"We carry out energy saving activities in the manufacturing processes that consume significant amount of energy. In addition to achieving RE100, reducing greenhouse gas emissions through improved energy efficiency is an essential task for us to reach the goal of carbon neutrality."
Jerry Kim, Energy Engineering Planning Team

"LG Energy Solution's end-of-life battery reuse project aims at establishing a sustainable battery ecosystem through global circular economy system that encompasses collection, reuse, and recycling. We need to reach this goal as quickly as we can through accurate diagnoses, economical solutions, and the economy of scale."
Jinu Seong, Reuse Business Team

"LGESNJ was the first in the group to earn a 'Zero Waste to Landfill' claim validation mark from UL Solutions in 2018, upgrading to a platinum rating in 2022. We will strive to reduce our waste discharge to minimize the adverse impact on the environment, and also reduce waste processing costs."
Yue Tao, LG Energy Solution Nanjing (LGESNJ)

"In reaching our goal of achieving carbon neutrality across the entire value chain by 2050, our suppliers' participation and cooperation is crucial. SRM Team is working with Tier-1 suppliers of major materials, such as cathodes and anodes, for their RE100 transition by 2030."
Yesol Choi, SRM Team

"We are carrying out physical and mental health care activities for employees, family-friendly activities for healthy family life, and activities to boost employees' morale and build camaraderie. Also, we are planning social contribution activities in which employees can participate to be able to experience happiness and even greater joy by sharing with others."
Lisa Lee, Joyful Workplace Design Team

ESG by Me

"I am going to continue speaking up tirelessly via our online forum so that employees' valuable opinions are reflected in improving our corporate culture. I will do my part to create an environment where today's Junior Board (JB) activities continue in the future so that all employees can contribute to establishing a better corporate culture."
Kil Ja Lim, The Representative of Junior Board

"As a person in charge of automotive customer sales, I'm personally experiencing how the entire auto manufacturing industry is focusing on ESG. At the same time, intensified raw material supply issues have generated many inquiries regarding supply chain management. In order to respond to the increasing demands, we are thoroughly preparing for stable supply of raw materials and subsequently metals."
Shane Lee, Americas CRM Team 2

"Global battery market is rapidly growing due to the forced implementation of policies that regulate carbon emission and electrification in countries around the world. In addition, there is stronger demand for corporate social responsibility. As such, ESG is not a stand-alone task, but rather an integral part of all business activities. Going forward, we will be able to carry out projects with a higher degree of completion in terms of ESG only if we work together with our customers."
Yeon-ah Park, MI Strategy Team

"We are constructing a sustainable battery ecosystem in Europe in accordance with the EU's battery regulation, which is to be finalized by the end of 2022. In order to preemptively respond to rapidly changing markets and regulatory requirements, we are looking to actively communicate with battery businesses and other related agencies in Europe."
Miyeon Yoon, LG Energy Solution Europe GmbH (LGESEG)

"Our team's goal is to help every employee internalize ESG management and make decisions in consideration of ESG throughout the value chain. With such efforts, supported by LG Energy Solution's capabilities and assets, we will be able to become a global top-tier pioneer in ESG that creates a more sustainable world."
Ga Yee Park, ESG Strategy Team

"LGESNJ strives to grow with and expand its influence in local communities. We currently work with local communities to perform a variety of activities including COVID-19 response, education sponsorship, volunteer services, environment protection, and residential environment improvement. We are achieving sustainable growth with everyone's power and ability combined together."
Feixianzi Li, LG Energy Solution Nanjing (LGESNJ)

03

ESG Impact

In the first half of 2021, LG Energy Solution identified key tasks under the vision of “We CHARGE toward a better future” to build a worldwide green battery ecosystem and contribute to sustainable development for future generations. Among the key tasks, we intend to prioritize “Beyond Carbon Neutrality,” “Perfect Closed Loop,” “Supply Chain Sustainability,” and “Diversity, Equity, and Inclusion.”

ESG Strategy Q&A with CRO

Bangsoo Lee,
CRO of LG Energy Solution

We are curious about the role of the CRO of LG Energy Solution. We also want to ask why LG Energy Solution focuses on risk management and ESG management.

The CRO (Chief Risk Officer) is responsible for managing risks associated with all of the company's activities, including safety, environment, quality, business, and finance.
I am in charge of preemptively managing overall business risks through establishment of a company-wide crisis management framework, operation of risk management specialized entity, and execution of regular compliance risk training. I am also responsible for crisis response, post-crisis management, and prevention of crisis recurrence. Since 2020, as the scope and impact of crisis has expanded indefinitely, including COVID-19 pandemic, natural disasters caused by climate change, and rising uncertainties in the global supply chain, I strongly believe that ESG management is the catalyst for innovation and challenge that can turn risks into opportunities to create a sustainable future.
LG Energy Solution noted that stakeholders' demands for ESG management, namely, greenhouse gas reduction, renewable energy use, human rights and diversity issues, are increasing worldwide. As it has a significant impact on mid- to long-term company value, we have felt the need to tackle them. In order to establish ourselves as a "sustainable" company to customers, shareholders, members, and society in the global market, we intend to be transparent about ESG-related performance and plans.

What is LG Energy Solution preparing and planning to strategize ESG management?

In the first half of 2021, LG Energy Solution announced its vision "We CHARGE toward a better future," with a view to establishing global green battery ecosystem and contributing to sustainable development of future generations. We defined eight key areas, including climate action and circular economy, and identified 30 main tasks for implementation. In 2022, we redefined the strategic framework to set 18 main tasks by reorganizing the existing tasks, introducing additional tasks to manage water risk and biodiversity, and each specialized department is in the process of implementing them. Furthermore, in 2022, We encouraging our employees to internalize the idea of ESG in work through ESG campaigns and on-the-go training sessions. We, as the first mover in the global battery industry, will also strive to bring better outcomes from ESG management beyond global expectation of all walks of life, and thereby step forward to be an ESG trendsetter.

What issue is LG Energy Solution recently focusing on regarding the ESG management?

Recently, environmental and social issues such as renewable energy conversion, carbon neutrality, diversity and equity have become important, and areas of ESG management are being specified including natural capital management and circular economy. In line with these changes, the ESG department comprehensively analyzed the domestic and global industrial environment, emerging ESG initiatives and views of various stakeholders of the company, based on which it redefined our priority tasks. We aim to focus all of our employees' capabilities on the following four priority tasks: (1) Carbon Negative Strategy; (2) Perfect Closed Loop; (3) Supply Chain Sustainability; and (4) DEI (Diversity, Equity, and Inclusion).

Phase 1. 2022	Phase 2. 2023	Phase 3. 2024
Advanced ESG Framework	Jump up ESG	ESG Trendsetter
Establishment of operational systems for ESG implementation and design/implementation of roadmap for important tasks (carbon neutrality, global social impact, etc.) considering urgency of issues ESG internalization (i.e., mindset, system, performance measurement)	Bringing tangible outcomes of priority tasks, and establishment of stakeholder engagement platform	Leading ESG trends within the global battery industry and creating ESG performances exceeding global level

Internal decision-making frameworks for ESG management seem to play pivotal roles in driving further changes in the future.

LG Energy Solution established an ESG Committee in June 2021 to systematically respond to important ESG issues. The ESG Committee defines keynote of the policies, strategies, as well as mid- to long-term goals of ESG management in the areas of environment, safety, CSR, customer value, shareholder value, and governance, and it deliberates on and makes decision relevant to the implementation of ESG strategic framework. Four of the five members are outside directors, and the ESG Committee convenes at least semiannually. The ESG Committee supports our company in fulfilling its environmental and social responsibilities and roles, and establishing a transparent governance to achieve sustainable growth in the long term.

An ESG department has also been established. What is the role of the department?

LG Energy Solution established ESG department, a dedicated entity to systematically respond to internal and external ESG issues and to strengthen its expertise. The ESG department is responsible for establishing the strategic direction of ESG management of LG Energy Solution and designing and implementing ESG tasks in close coordination with relevant departments. It also monitors and responds to ESG-related demands from various stakeholders. Taking into account the progress made in the implementation of ESG tasks, as well as stakeholder needs, it sets the agenda of the ESG Committee meetings. In addition, the ESG department designs and rolls out the companywide initiatives to promote ESG awareness and embeddedness. It proactively participates in global network and initiatives to preemptively respond to ESG issues and to communicate key achievements of our ESG management and engage with stakeholders.

In what direction will the ESG management proceed towards?

All of the members of LG Energy Solution aim to internalize ESG management and to make decisions that take ESG into account in the entire value chain from production to post-consumption. These efforts build upon each other so that LG Energy Solution can have a good influence based on its capacities and assets, and can create a sustainable world, thereby becoming a global top tier pioneer in ESG.

ESG Committee

Outside director	Meenam Shinn(Chairperson)
	Meesook Yeo
	Seungsoo Han
	(Vacant)*
Inside director	Youngsoo Kwon(CEO)

* Following the resignation of Dukgeun Ahn as at May 10, 2022, a new outside director will be appointed

Major Matters for Deliberation and Resolution by the ESG Committee

① Mid- to long-term ESG strategy and roadmap
② Targets and programs of key tasks associated with mid- to long-term ESG strategy
③ Identification of ESG risks and measures to address them
④ Third-Party ESG ratings and ESG disclosure

Dedicated ESG Entity

- Decide on strategic ESG direction
- Manage the implementation of key ESG tasks
- Engage in global ESG initiatives
- Communicate with stakeholders and address their ESG-related needs
- Serve as the ESG Committee Secretariat

- Promote carbon negative strategy
- Plan and implement global CSR programs
- Promote employees' ESG internalization
- Support suppliers' ESG risks management
- Engage in external ESG communication

ESG Strategic Framework

ESG VISION

We **CHARGE** toward a better future

C	H	A	R	G	E
Climate Action & Circular Economy	**Human Value Management**	**Advanced EH&S**	**Responsible & Impactful Business**	**Good Governance**	**ESG Disclosure & Communication**
Climate action Achieve carbon neutrality by 2050	**Human rights** Build human rights risk-free business sites	**Product stewardship** Secure 100% green products by 2022	**Responsible supply chain** Secure over 90% ESG low-risk group by 2030	Compliance	Communication
Circular economy Build a closed loop by 2025	**Human capital** Promote diversity, equity and inclusion	**EH&S** Zero serious EH&S accidents	**Shared growth with and impact on the local community** Reinforce brand image for mutual growth and cooperation	Governance	ESG initiative

8 critical areas — 4 major enablers

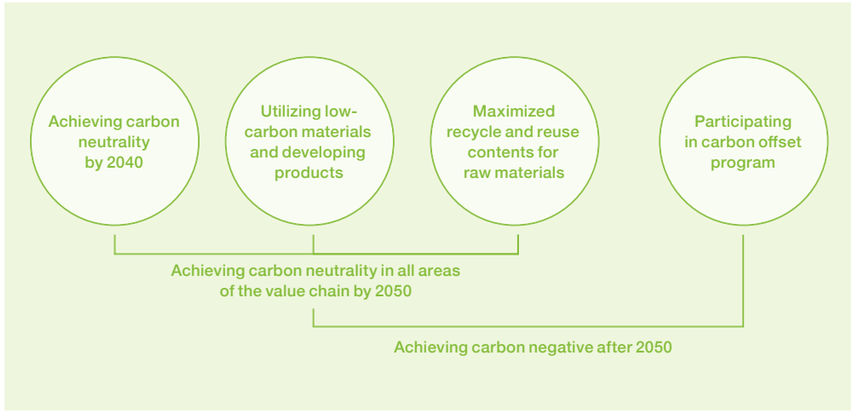
18 key tasks	
❶ Management of the GHG reduction roadmap	⓾ Reinforcement of occupational EH&S management
❷ Management/improvement of energy efficiency	⓫ Reinforcement of critical materials due diligence
❸ Reduction of carbon emissions (RE100 / EV100)	⓬ Support shared growth with and impact on local communities
❹ Development of a perfect closed loop	⓭ Engagement in global social impact activities
❺ Establishment of a water risk management system	⓮ Upgrade and certification of the company-wide compliance system
❻ Establishment of a biodiversity risk management system	⓯ Improvement of the governance system and reinforcement of transparency
❼ ESG risk management across the entire value chain	⓰ Reinforcement of the ESG committee's expertise
❽ Promoting Diversity, Equity and Inclusion (DEI)	⓱ Increased transparency of ESG disclosure
❾ Strengthening product stewardship	⓲ Strengthened engagement in global initiatives and networks

Beyond Carbon Neutrality

Climate change is proceeding at a much faster speed and is more widespread than we think, and it's a time that requiring companies to take immediate and active actions. According to the 6th Climate Change Evaluation Report released in August 2021 by IPCC (Intergovernmental Panel on Climate Change), despite efforts by various countries to curb carbon emissions, the average global temperature is likely to rise by 1.5℃ within the year 2040. Maintaining the level of our efforts so far is lacking in terms of climate action. In order to actively respond to global changes, LG Energy Solution has set specific goals and strategies to achieve carbon neutrality. Not only that, but we also think about the goals that follow. In order to achieve carbon negative beyond carbon neutrality through carrying out additional carbon reduction activities beyond the company's business sites boundaries, we will install renewable energy and ESS facilities near our global business sites, and will cooperate with various stakeholders to support the energy welfare in areas that are vulnerable to climate change.

What are the goals of LG Energy Solution in regards to carbon neutrality?

LG Energy Solution has already committed to achieve RE100(Renewable Electricity 100%)/EV100(Electric Vehicle 100%) by 2030 and carbon neutrality of the entire battery value chain by 2050. This is because, as a leading company in the battery industry, we thought it is our duty to deliver a cleaner future to next generations that follow and to maintain sustainable growth around the world. In particular, by minimizing green-house gas emission generated through the battery manufacturing process, EVs being equipped with our batteries and ESSs will accelerate the realization of a carbon neutral society, and we will set further goals and implement intensive tasks to achieve them. First of all, by establishing an intermediate goal to achieve carbon neutrality by 2050, we have increased the level of specificity towards the goal achievement. After achieving RE100/EV100 in 2030, we intend to realize carbon neutrality in battery production scope (Scope 1&2) by 2040 as a mid-process, on the way to achieving carbon neutrality by 2050. In order to acheive this, we plan to consider renewable energy (biogas, hydrogen, etc.) to replace thermal energy (LNG, etc.) used in addition to electricity and developing secure project for carbon offset credit. Additionally, we will develop and participate in the global carbon offset program while achieving the goal of carbon neutrality by 2050. Ultimately, it is to drive the achievement of carbon negative. This is the goal after achieving carbon neutrality in 2050, and LG Energy Solution will increase sustainability by actively responding to climate change along with local communities and stakeholders.



How will LG Energy Solution achieve carbon neutrality?

Green-house gases generated during battery manufacturing are caused by energy uses such as thermal and electricity, which is used in the production process. Approximately 70-80% of the total emissions are derived from indirect emissions (Scope2 emission from power generation) from the electricity usage, and the rest is due to the combustion of fuel (Scope1 emission, LNG/Gasoline, etc). Therefore, to achieve carbon neutrality during the battery manufacturing process, it is necessary to convert electricity to renewable energy as much as possible, and to replace fuel with other energy sources along with minimizing energy use.

The Year 2030- RE100/EV100

In April 2021, LG Energy Solution joined RE100 and EV100 at the same time for the first in the battery industry in April 2021. The original goal of RE100 to convert 100% of electricity to renewable energy by 2050 was moved up by 20 years, and the company promised RE100 and EV100 (converting 100% of business vehicles to EVs) by 2030. Putting the goal into practice, LG Energy Solution's plants in Wroclaw, Poland (LGESWA) and Michigan, US (LGESMI) have already converted 100% of the electricity into renewable energy through the Green Pricing system and the REC (Renewable Energy Certificates) system, and the plants in Ochang, Korea and Nanjing, China are also gradually increasing their share of renewable energy usage. Our global production plants are looking to convert 100% of the electricity to renewable energy by 2025, and the non-manufacturing business sites such as R&D centers are preparing to have 100% conversion by 2030. From the time of mass production, it is the principle for new production base and joint venture (JV) to operate 100% of the electricity as renewable energy, and the procurement of renewable energy is considered from the time investment location is reviewed.

The Year 2040- Carbon Neutrality in the Company Areas

In order to achieve carbon neutrality within our battery manufacturing area (Scope 1&2) by 2040, the alternatives of fuel uses aside from electricity are needed. Fuel should be transition to renewable energy sources (biomass, hydrogen, or electricity) as much as possible, and leftover emissions derived other than electricity and fuels are needed to be offset by utilizing external carbon credit. In order to do this, we will promote electrification of facilities task, such as optimizing energy use through energy efficiency, finding alternative green energy sources, and transitioning fuel into electric boilers. In addition, we plan on developing carbon reduction businesses using batteries and reviewing carbon offset businesses like afforestation business.

The Year 2050- Carbon Neutrality in All Value Chain

The key to achieving carbon neutrality in 2050 is reducing carbon emission in the supply chain. According to the Life Cycle Assessment regarding battery, it has confirmed that the most of carbon emission is generated from battery raw materials than during the battery manufacturing process. Therefore, how effectively the carbon emissions of battery raw materials are reduced is expected to be the key to achieving carbon neutrality of battery. In order to do this, LG Energy Solution plans on expanding from “Tier-1” suppliers to “N-Tier,” ultimately monitoring carbon emissions from all value chains from mining all the way to battery production stage, and supporting the suppliers' RE100 participation and carbon reduction activities. In addition, instead of raw materials that are directly mined, we will gradually increase the proportion of recycled raw material contents that have less impact on the environment, thereby contributing to the reduction of carbon from battery, and also establish a virtuous cycle system of battery raw material.

ESG by Me

We asked Sung hoon Lee of ESG Impact Team

LG Energy Solution joined RE100 in 2021. What was the reason for that and what are the plans for the future?

We joined RE100 in order to strengthen global leadership and secure ESG competitiveness, and we achieved early transition of 100% renewable electricity by completing the introduction in Poland plant (LGESWA) in 2019 and in the Michigan plant (LGESMI) in 2020. As a battery company, we are the leading promoter of the introduction of renewable energy. From now on, all production sites including the newly built ones will be converted to renewable energy starting 2025, and will expand to non-production sites such as the headquarters, Daejeon, Gwacheon, and Magok to complete the 100% renewable electricity transition starting 2030. We also plan to expand this 100% renewable electricity transition to our partners in the supply chain.

LG Energy Solution was the first among domestic companies to be selected as the Global RE100 Advisory Committee member company, what is the Advisory Committee?

The RE100 Advisory Committee of the corporate member establishes the main strategic direction and mid- to long-term roadmap of the RE100 campaigns, including taking measures to encourage companies to join RE100 to participate in using renewable energy, to procure renewable energy, etc. The Committee also plays an advisory role on policy proposals of each country as 2-year service term. As member of RE100 advisory committee group, we will focus on promoting global leadership of LG Energy Solution, networking, and escalating any useful opinions from the industry to ensure that carbon reduction is easily achieved in the battery industry and supply chains.

How do we manage the carbon footprints of batteries?

Overview and Status of LCA

LCA, life-cycle assessment is a methodology for assessing environmental impacts associated with all the stages of the life cycle (cradle-to-grave) from raw material acquisition and processing through the product's manufacture, distribution and use, to the recycling or final disposal of the materials composing, and the resulting environmental impacts of emissions into air, water, and soil. LG Energy Solution introduced the life-cycle assessment in 2019. Based on assessment results of the potential impact of our battery products, we communicate with our key stakeholders including the customers, and internally, we use this asssessment as an important criterion and tool for drawing carbon intentsity data of products identifying a hot-spot of raw material productions in our supply chain and establishing mid- to long-term carbon neutral strategies.

Assessment of Carbon footprint information

As demand for disclosure information of product environmental impact such as strengthening the regulations of battery carbon footprint and recycling in EU and advanced countries have increased, LG Energy Solution is making great efforts to estimate information on battery carbon footprint and to prepare its response to regulations. In particular, in order to carry out LCA that meet international standards, LG Energy Solution has established and operated comprehensive assessment guidelines, which reflect various global standard and product category rules for battery products and has established carbon footprint roadmap for individual products, which reflect our long-term carbon reduction strategy.

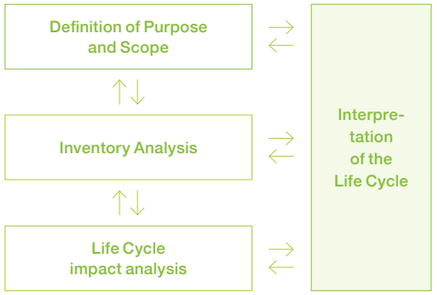
Supply Chain Suppliers' Reduction of Green-house Gas Emissions

According to the Hot-spot analysis through the performance of LCA, we have confirmed that our batteries generate about 20-30% of green-house gases during cell production and about 70-80% of green-house gases in raw material productions from supply chain, and especially, more than 50% of carbon emissions is generated from the 4 major battery raw materials such as cathode and anode active materials, separators, and electrolytes. LG Energy Solution identifies the environmental impact through Hot-spot analysis of the supply chain and established a supply chain strategy that mandates Tier-1 suppliers of the raw material suppliers to use 100% renewable electricity by 2025, in order to reduce Scope3 carbon emissions of the supply chain. In the future, we plan on upgrading accuracy on Hot-spot analysis and expanding the application of 100% renewable electricity to N-Tier suppliers.

Internal and External Activities and Future Plans

In order to respond to the strengthening of global regulations on green-house gas reduction and the mandatory disclosure of carbon emission, LG Energy Solution will consider introducing system that assessing immediate product environment impact results, and is planning to use the results could be in conjunction with 3rd party certified systems like European PEF and domestic EPD. Also, we are planning to participate in global initiatives such as RECHARGE (The Advanced Rechargeable & Lithium Battery Association) and GBA (Global Battery Alliance), thereby carrying out activities to enhance leadership by expressing opinions on the establishment of LCA assessment guidelines for new batteries.

LCA Process (ISO 14040)



Actions of Each Stage

1. Definition of Purpose and Scope	• Determining purpose/scope of LCA • Determining the target product and system boundary
2. Inventory Analysis	• Data collection for input and output material • Draw Inventory analysis results
3. Impact Analysis	• Evaluate inventory analysis result to identify impact towards global warming
4. Interpretation	• Analyzing the list and interpreting the result of the evaluation of the impact to meet the purpose of the research

Risk and opportunity analysis arising out of climate change

Category	Issue	Risk Factor	Opportunity Factor
Transition	Green-house Gas Emissions Trading System	• Increasing expense of purchasing Certificated Emissions Reduction (CER) due to the rising price of CER and the tightening of regulations regarding emissions	• Selling surplus emission rights through activities to reduce green-house gas emissions • Acquiring additional emission rights through external carbon reduction business
	New Regulations Regarding Carbon Footprints (EU Battery Regulation, CBAM, etc.)	• Increasing costs due to new and strengthened carbon-related regulations (expenses for verification/examination and compliance)	• Improving the mid- to long-term sustainability of the battery industry ecosystem
	Introduction of High Efficiency/Carbon Reduction Technology	• Increasing costs due to renovation of highly efficient facilities and new investment costs • Increasing R&D costs due to high efficiency/carbon reduction technology	• Reducing green-house gas emissions in business sites and reducing energy costs • Expanding business opportunities through energy/carbon reduction technology
	Changes in Consumer Behavior	• Incurring expenses needed to establish and maintain various communication channels with consumers/stakeholders • Increasing R&D costs of developing high efficiency/low carbon products	• Expanding the front industry market, such as that of EVs and ESS for home use, etc. • Improving company awareness as the leading company of climate action
	Increasing Renewable Energy Use	• Increasing costs due to renewable energy procurement • Increasing costs due to investment in renewable energy and expansion of infrastructures	• Expanding ESS business opportunities to supplement intermittent nature of renewable energy • Cost reduction through long-term PPA contract for renewable electricity and power generation businesses
Physical	Typhoon. Flood. Drought. Rising Temperatures, which are Natural Disasters	• Having supply disruption of water and other utility in the business sites • Increasing investment in disaster prevention/prevention facilities • Incurring expenses regarding recovery and loss of business opportunities in the event of a disaster • Increasing operating costs for business site utilities, such as air-conditioning, heating, and dehumidification	• Reducing utility consumption by improving the equipment and processes • Enhancing efficiency of the energy usage by adapting to utility recycling (waste heat/waste water) technology

ESG by Me

We asked Jerry Kim of the Energy Engineering Planning Team

Increasing the energy efficiency of processes and utility facilities is prioritized in order to reduce green-house gases in the business sites. Being in charge of energy, what kind of activities do the team carry out in order to reduce energy/green-house gases at domestic and foreign business sites?

At the Energy Engineering Planning Team, we have established 'Energy Visibility' to check the energy flow used in the business sites and has been using it to strengthen the management of energy-saving activities. We have completed the new certification of ISO 50001, which is the standard of international energy management system, by establishing a systematic energy-saving management process. We are also drawing improvement measures through the analysis of facility efficiency, using energy data from the G-UIS (Global Utility Integrated System). Additionally, we are continuing energy-saving activities, which are targeting production processes that are energy-consuming. Some of the specific activities include establishing a green resource circulation system that reuses incinerated waste as steam, and introducing a recovery system for exhaust heat from the manufacturing process. Green-house gas reduction through energy efficiency is as necessary as RE100 to achieve our carbon neutrality goal.

What are some of the difficulties in your work?

Due to the high growth of the battery industry, the global production capacity of LG Energy Solution is rapidly increasing every year, and the resulting increase in energy use makes it difficult for us to achieve our carbon neutrality goal. However, LG Energy Solution is continuing energy-saving activities such as the introduction of high efficiency facilities through optimized facility operation, and I would like to take part in the transition of RE100 in all business sites by 2030 and achievement of carbon neutrality by 2050.

Perfect Closed Loop

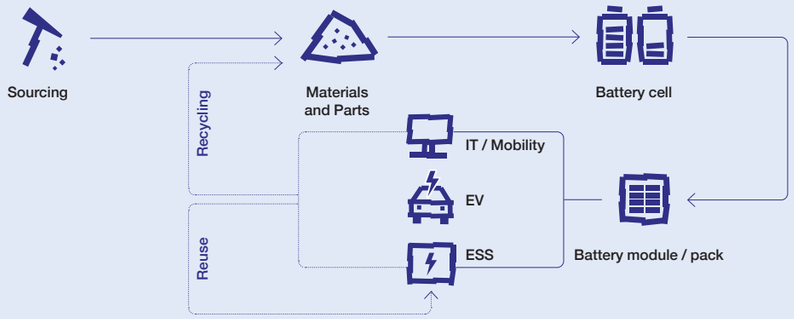
With the growth of the EV market and the rapid increase in demand for batteries, the disposal of used batteries has become an important issue. An EV battery no longer operates at sufficient capacity when the vehicle reaches the end of its life expectancy (the length of time in its original condition) or its lifespan. Used batteries, also called "end-of-life batteries", meaning that they have reached the end of their usefulness. The inappropriate disposal of used batteries will cause serious environmental pollution. Still, they can be turned into valuable resources through recycling and reuse.

Can end-of-life batteries also be a resource?

In Europe, the United States, and China, the waves drive changes; they take the plunge into investment, development of policy and criteria for end-of-life batteries, fueling green business and boosting economy. Bloomberg NEF, a global market research firm, predicted that there will be more than 110GWh reusable end-of-life batteries in the global market by 2032. The batteries are equivalent to the electrical consumptions of as many as 11 million pure EVs that travel 50km per day on average. This means if you utilize end-of-life batteries well, you can reuse energy that can charge 11 million pure EVs. In 2020, EU Battery Regulation initially proposed mandatory minimum levels of recycled raw materials in manufacturing batteries sold in Europe by 2030 and also suggested that the collection rates of end-of-life batteries shall be increased to improve the recycling rates.
In line with this trend, LG Energy Solution has established a Closed-Loop system that covers the entire value chain from production of battery raw materials to consumption and disposal, and is working with local companies to reuse and recycle the used batteries and to recycle the scraps generated during the production process, which meet global environmental standards. We are also building a sustainable battery value chain through reusing the recovered battery based on the battery life cycle and decomposing the battery to extract rare metals such as lithium, cobalt, nickel and manganese for recycled usage. To lead the future end-of-life battery market and further environmental-friendly manufacturing, LG Energy Solution keeps up with investment and sharp the state-of-the-art technologies in ESS (Energy Storage System), which is our long-time asset.

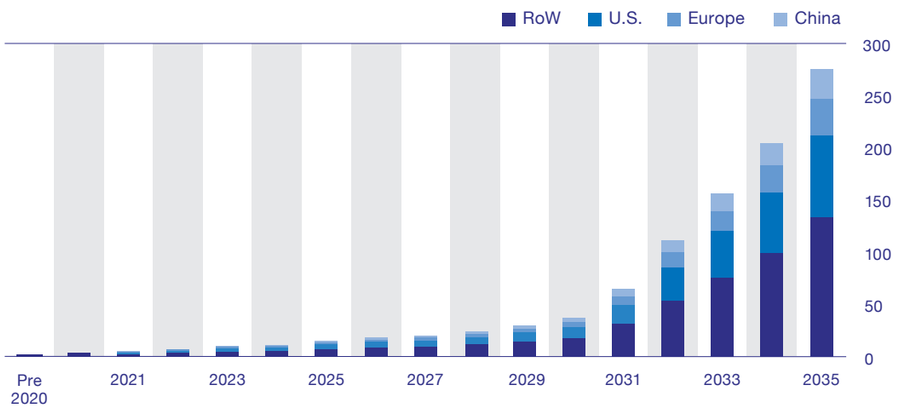
Battery Circular Ecosystem

We will foster a sustainable industrial ecosystem by managing the entire process from battery materials to production, usage, disposal, and recycling.



GWh, Residual Capacity

Source Second-Life Batteries by Bloomberg NEF 2021



How does the battery reuse work?

End-of-life EV batteries still have a remained residual capacity of about 70-80% of the original ones. Even though the EV battery has completed its lifespan, it could be reused depending on its residual capacity and state of health (SoH). LG Energy Solution is establishing and executing a process to utilized end-of-life batteries as valuable energy resources.

01 Collection of End-of-life Batteries

It is a process in which batteries, which can no longer be utilized for EVs due to the vehicle reaching the end of its life or car accidents, are recovered through the regional collection system. Through initial diagnosis, batteries that can be reused and recycled are transported and stored separately.

02 Diagnosis and Commercialization

In the reconditioning process, we select reusable batteries through detailed test and diagnosis, including the appearance of reusable batteries, electrical inspection, diagnosis and prediction of residual capacity, and rate them according to their conditions and purposes of use. Batteries that do not meet the criteria for reuse are recycled.
In the refurbishing process, we develop solutions that meet system performance, quality level, and requirements for certification in each purpose of reuse, and ensure the cost competitiveness by having optimal design of necessary parts with verified safety as a top priority and efficiency of manufacturing procedures.

03 Sales and Marketing of Reusable Products

We preemptively secure applications that can maximize battery value to sell products that have a competitive edge and are economically viable for each purpose, and design a recovery system that can induce reuse after the sales and usage of the products.

LG Energy Solution is speeding up the pace of actualizing future opportunities through sufficient review, performance, and early verification of each process.

What is LG Energy Solution's battery reuse strategy?

To strengthen its capabilities as a battery manufacturer, LG Energy Solution has secured the core infrastructure technology of the battery reuse business and is establishing an optimized business model. The advancement of the safety/remaining battery life evaluation algorithm based on the diagnostic database and the securement of the safe and verified system solution are key technologies for business continuity, and we are in the process of creating a suitable business model and discovering the core usages that can minimize the end-of-life batteries' limitations and increase their competitiveness.
As part of this, we plan to secure verified technology and know-how early, through various attempts and improvements such as installation of EV charging stations using end-of-life batteries (Ochang, Chungcheongbuk-do) and establishment of ESS linked to renewable power (Jeju-do). We also actively participate in regional regulation and policy improvements and cooperate with major OEMs and related companies.
When the recovery of the used batteries for EVs is in full swing, LG Energy Solution is performing and preparing various tasks to preemptively propose diversified business models to the market and provide verified solutions. If used batteries cannot be used anymore, we are also preparing a plan to establish a virtuous cycle system, in which metals necessary for battery manufacturing are extracted through battery decomposition, refining, and smelting.

The Convergence EV Charging Station in Jeju. (Left Aewol Susan-ri Turning Place **/ Right** World Cup Stadium)

ESG by Me

We asked Jinu Seong of the Reuse Business Team

What is the most important and difficult part of LG Energy Solution's end-of-life battery reuse business?

LG Energy Solution's end-of-life battery reuse business is not just for creating profits. Our goal is to build a healthy industrial ecosystem by collecting and reusing batteries in terms of sustainability and through a virtuous global cycle of resources system that includes recycling. We believe that our technological advance in reconditioning and refurbishing, and potential market size are the keys to achieve the goal. However, the institutional arrangements for revitalization are still insufficient, so continuous supplementation is needed. We participate in policy development by having a dialogue with the government for better outcome and swifter improvement.

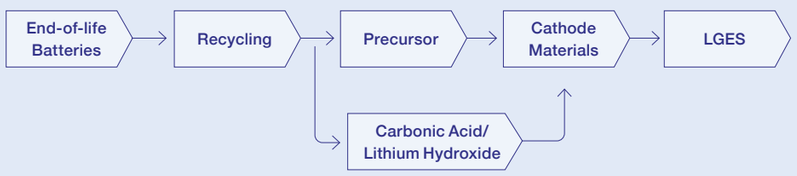
What kind of demonstration project is being carried out by the Reuse Team, and how is the battery demonstration project carried out?

As criteria for certification and inspection are still in establishing in Korea, we go on with each of the domestic projects with approval of regulatory sandboxes. It will take more time for the system to be finalized. Still, institutional restrictions, such as limitations on transportation of hazardous goods, BMS data sharing, and performance test criteria of reused batteries in pack units, are expected to be gradually relieved. Starting with the "ESS Demonstration of Reused Battery with Fast Recharge," which will be installed and operated in Ochang Plant in 2021, we are preparing demonstration projects for various purposes like UPS and power reserve. We are planning to continue to expand and promote them.

How does battery recycling work?

Battery recycling is becoming more significant in the circular economy as a means to reduce green-house gas emissions generated during the production of raw materials, to prevent resource depletion, and to decrease environmental destruction problems by recycling. Batteries can be recycled by utilizing no longer reusable batteries and scraps generated during the production process. Raw materials of the battery can be extracted by grinding and dissolving them, and by establishing the resource circulation system where they are re-injected into the production stage of cathode materials, the proportion of recycling can be increased.
LG Energy Solution strives to establish a virtuous cycle of resources system that encompasses the overall value chain from production of raw materials to consumption and disposal, in order to minimize the environmental impact in the battery production process and to respond to investor and government regulations regarding the execution of circular economy. In order to do this, LG Energy Solution has signed a contract with Li-Cycle, the largest battery recycling company in North America, to provide scraps and to be supplied with 20,000 tons of nickel for 10 years. This is an amount that can produce 300,000 batteries, considering the standard of high-performance EV with battery capacity of 80kWh. Recently, in order to prepare for the expansion of the battery recycling market, we have sold the scraps generated during the production process to the recycling companies, and have established a system in which nickel, cobalt, lithium, etc. that are produced can be used as the recycled materials to make cathode materials. We have completed the implementation of recycling system at our Chinese business site in 2022 and will apply it to all production facilities of the business sites around the world, including Korea, Europe, and the United States, by 2025.

The Schematic Diagram of End-of-life Battery Recycling Value Chain



How to manage the waste generated at the business sites?

As the world gradually faces on problems in securing natural resources and managing wastes, so in the recent ESG management, it has become more essential to set plans for a resource circulation system so as to increase the rate of reuse and recycle, which can lead to saving natural resources. LG Energy Solution is rapidly promoting conversion to the resource circulation system by minimizing incinerated and dumped waste and recycling waste discharged from business sites.

Reduction of Landfill Wastes

LG Energy Solution is achieving zero waste to landfill by proactively recycling wastes discarded from the business sites. China's Nanjing Plant won the highest platinum rating in recognition of a 100% resource circulation rate from the global certification agency, UL (Underwriters Laboratories). The US LGESMI Company has been certified as Landfill Zero for five consecutive years since 2018, recognized as having less than 1% of the overall landfill rate—waste sent to landfill as a proportion of the waste generated—from the NSF (National Sanitation Foundation).

Reduction of Incinerated Wastes

The Nanjing Plant developed its self-disposing technology for wastewater treatment that is generated during the production of cathode materials for the battery manufacturing process, to improve the operating conditions of its wastewater disposal plant (cohesion adjustment, etc.) and to reduce the amount of incinerated wastes by effectively removing graphite from the cathode wastewater.

Reduction of Hazardous Wastes

To prepare for the increase in hazardous waste generation due to the growth of the business, the Nanjing Plant developed a new technology to recycle NMP solvent waste (N-Methyl-2-pyrrolidone), which accounts for about 85% of the hazardous waste. The effectiveness of thin-film evaporation technology was verified through Lab Scale Test, and the original NMP recycling rate of 80% was increased to 97%. This helped streamline the processes' operations and reduce hazardous waste emissions and the risk of waste transportation.

ESG by Me

We asked Yue Tao from the Corporate/Environmental Safety Team of LG Energy Solution Nanjing (LGESNJ)

What is the "Landfill Zero" certification, and how is the Nanjing LGESNJ Plant disposing of waste?

"Zero Waste Landfill" certification means that it meets the standard of UL ECVP 2799, Environmental Claim Validation Procedure for Zero Waste to Landfill. In other words, this means achieving a 100% waste conversion rate through reduction, reuse, and recycling without the disposal of solid and hazardous waste. In 2018, the Nanjing Plant was the first to acquire "Landfill Zero" certification from UL and was certified with a platinum rating in 2022.

What are the policies for waste disposal in the future?

We will continue to do our best to classify and dispose of waste and, at the same time, reduce the emission of waste to lessen the environmental impact and reduce waste disposal costs. We also hope to have better understanding of waste disposal and take control of the risk through in-depth monitoring to keep safety rules in work.

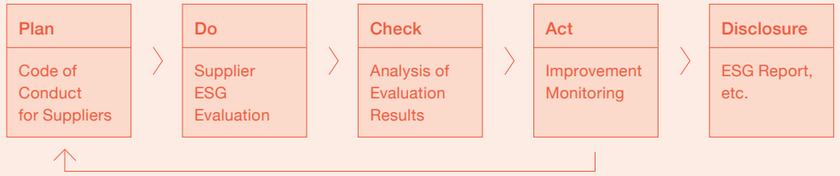
Supply Chain Sustainability

With the rapid growth of global battery market, ESG-related requirements in the battery industry have been increased including management of carbon emission, due diligence of supply chain, and the use of recycled materials. In particular, the notion that ESG management of supply chain is critical for sustainable battery business is gradually spreading throughout the industry. Considering the vastness and diversity of global battery material supply chain, in order to manufacture sustainable batteries, it is extremely essential to not only work with Tier-1 suppliers but also to broaden the scope of supply chain that take part in ESG-related activities.
As a leader of the global battery market, LG Energy Solution is performing various ESG-related activities on supply chain, including conducting ESG risk assessment on suppliers, strengthening due diligence of raw material supply chain, and supporting carbon reduction in supply chain.
With a view to fostering ESG activities as an integral part of sustainable business of all stakeholders of battery value chain, we will continue to actively reflect the views and needs of various stakeholders within the supply chain and formulate transparent and responsible supply chain ESG strategies.

How do you conduct ESG evaluation of your supply chain?

LG Energy Solution promotes awareness and urges actions of each and every supplier on human rights and labor issues as well as the purchase of responsible minerals, through the Code of Conduct for Suppliers. Supplier ESG evaluation is conducted annually to verify whether suppliers are in compliance with the Code and to identify corrective action plan and monitor the implementation in conjunction with on-site audit. Supplier ESG evaluations proceed in connection with purchase evaluations (i.e., new supplier registration evaluation, regular evaluation). A new supplier registration process requires evaluation of the candidate including on 10 ESG-related items. Regular purchase evaluation is conducted on domestic and international raw material suppliers and ESG evaluation accounts for 20% of the complete evaluation. In 2021, we focused on redefining and strengthening our own purchase management system split from LG Chem. The criteria of suppliers ESG evaluation was also adjusted, for example, strengthening the elements of climate action. In the first quarter of 2022, we conducted an ESG evaluation on 143 suppliers, with the updated self-assessment questionnaire (SAQ)—it consists of 67 questions, covering various areas such as labor conditions, human rights, ethical management, supplier CSR, energy and greenhouse gas, and occupational environment, health and safety (EH&S). Compared to the results of 2020 ESG evaluation, higher scores were marked in the areas of labor conditions, human rights, and supplier CSR, which led to an over 10% rise in the total score. Such change indicates not only heightened awareness and response of suppliers due to strengthened global regulations and increased social awareness but also expanded application of laws related to labor conditions. On the other hand, the newly added energy and greenhouse gas category marked a low score, demonstrating the need to raise awareness of suppliers to plan climate actions, including increased use of renewable energy and concrete activities to reduce greenhouse gas emissions.
In addition, for some of the suppliers in the high-risk group as revealed by SAQ results, we conduct due diligence on site to follow-up on serious nonconforming issues, identify corrective action plans and monitor its implementation. In 2019, the on-site due diligence was conducted on 10 suppliers, and in 2020, an ESG operation guide was produced and distributed to all suppliers instead of field inspections due to COVID-19. We also plan to conduct on-site due diligence in 2022 to monitor the implementation of corrective action plans by the end of the year and reflect it to the regular purchase assessment for the following year.
LG Energy Solution includes ESG compliance clauses in its purchasing contracts to ensure every supplier is committed to managing ESG issues. We also encourage and support suppliers' transition to renewable energy. We intend to keep advancing the ESG evaluation system and expand the subjects and scope of assessment, as necessary, in order to strengthen ESG management throughout the supply chain. With an aim to secure over 90% of the low-risk group by 2030, we plan to strengthen monitoring of the status of ESG management of supply chain and support for the continuous improvement.

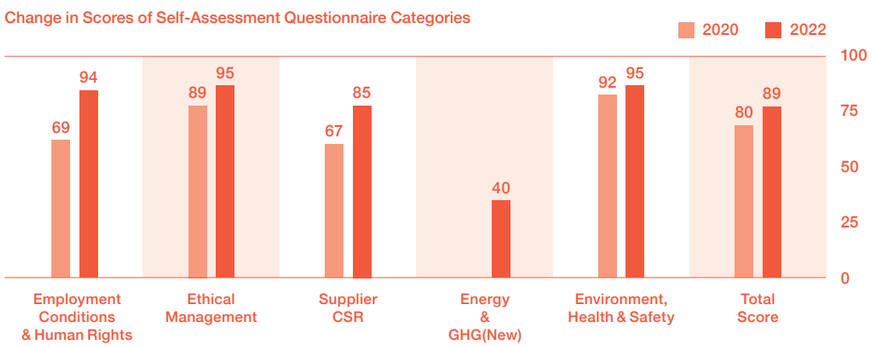
LG Energy Solution's ESG Management Process in Supply Chain



Supplier ESG Evaluation Process

Change in ESG Evaluation Subjects

Change in Scores of Self-Assessment Questionnaire Categories



Status of Risk Groups

High Risk <65 points Mid Risk 65–84 points Low Risk ≥85 points

Year	High Risk		Mid Risk		Low Risk	
	Suppliers	Percentage	Suppliers	Percentage	Suppliers	Percentage
2019	10	9.8%	55	53.9%	37	36.3%
2020	11	9.4%	61	52.1%	45	38.5%
2022	3	2.1%	15	10.5%	125	87.4%

※ ESG evaluation was not conducted in 2021 due to the restructuring of the purchase management system

ESG by Me

We asked Mi Young Jo of the Daejoo Electronic Materials (Supplier) Environment Team

Please describe the work you currently perform.

I am in charge of energy, safety and environment licensing work in the Environment Team. We address needs and inquiries from customers like LG Energy Solution related to carbon neutrality and climate action and support installation of facilities and equipment as carbon reduction measures.
Also, we collect energy consumption data of the company every year and submit it to relevant agencies.

What is Daejoo Electronic Materials' plans for carbon neutrality and what are some challenges in the implementation?

As agreed with LG Energy Solution in our commitment letter we are purchasing green premiums to comply with the renewable energy transition rate. Our climate action is still in an inception stage so we plan to focus on purchasing green premiums, and we are currently exploring other measures. There are various measures known and available out there to reach carbon neutrality, but it is most challenging to find measures that our company can actually apply.

In what areas are you working with LG Energy Solution to accomplish carbon neutrality, and what do you want to discuss further in the future?

We are working on renewable energy plant installation support project with LG Energy Solution. We purchase green premiums from LG Energy Solution which allows us to apply for the project as a supplier. After the application, an agreement was reached, so we are currently reviewing the installation of solar equipment. It would be of great help if we could receive training on practical measures for achieving carbon neutrality that are applicable to our workplace.

How does your supply chain management work?

LG Energy Solution is committed to sourcing raw materials in a responsible and transparent manner and addressing potential human rights and environmental risks that may arise throughout the process of sourcing and producing raw materials. The core value of responsible sourcing is reflected in the 'Responsible Sourcing Policy' and the 'Code of Conduct for Suppliers,' and we communicate to our suppliers our commitment and thereby expectations for them to join forces on a regular basis, as their joint efforts and awareness are essential to manage ESG issues, minimize potential risks, and thereby procure minerals in a responsible and sustainable manner.

All of LG Energy Solution's policies and detailed activities related to responsible sourcing are based on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. A dedicated team in our purchasing division leads the due diligence process on cobalt supply chain, and we intend to extend this process to other core raw materials such as lithium, nickel and natural graphite. Moreover, we have introduced a blockchain platform since 2020 to track and manage warehousing of raw materials and product manufacturing history, and we plan to gradually increase the number of raw materials and suppliers that are subject to the application of this platform.

Global battery supply chain is extremely complex and vast, so it is difficult to solve all ESG risks arising in battery supply chain only through a single company's supply chain management activities. LG Energy Solution participates as a member company in numerous global initiatives such as Responsible Minerals Initiative (RMI) to seek optimal means of managing supply chain together with suppliers to establish responsible supply chain. We will continue to actively communicate with suppliers so that they recognize the importance of responsible sourcing activities and perform third-party verification on supply chain as well as their own risk reduction activities, and play a leading role to establish responsible battery supply chain.

Cobalt mining site and refinery

What do you do for reducing carbon emissions from your supply chain?

Given that over 70-80% of carbon emissions during battery manufacturing is generated from raw material supply chain, activities to reduce carbon emissions in sourcing and producing raw materials are absolutely critical to achieve carbon neutrality. LG Energy Solution currently carries out carbon reduction activities in their battery supply chain with the goal of achieving carbon neutrality across the entire value chain by 2050. We analyze carbon footprint data over the entire lifecycle of batteries to identify hotspots where a significant amount of carbon is emitted, and based on this data, we design carbon reduction strategies in our supply chain. Most of the carbon emitted from raw material production process results from power consumption, which means that the more power in supply chain we convert to renewable energy, the greater contributions we can make towards carbon reduction.

LG Energy Solution is committed to 100% renewable energy (RE100), aiming to convert all power used in the manufacturing process to renewable energy at both our own facilities and those of our Tier-1 suppliers by 2030, and is developing concrete plans in close coordination with suppliers, starting with cathode suppliers. In September 2021, we hosted an online briefing session for our major materials suppliers to share information on regulations and policies of key countries as well as global companies' actions in response to climate change, and to emphasize the importance of actions for carbon reduction. Further, through regular meetings with suppliers, we share our know-how in transition to RE100 and the latest regulatory updates; and discuss with each supplier to develop annual transition plans and implementation methods, considering various circumstances for renewable energy procurement per country. We are looking to closely collaborate with our suppliers so that these RE100 transition activities can serve as a meaningful first step toward the realization of carbon neutrality in supply chain in the future.

To reach the goal of complete carbon neutrality throughout a battery's lifecycle, LG Energy Solution is not only implementing renewable energy transition activities for supply chain but also exploring various carbon reduction measures including increased recycling and reuse of raw materials and improved energy efficiency in manufacturing processes.

ESG by Me

We asked Yesol Choi of the Supplier Relation Management Team

What do you do to use more of renewable energy as supplier?

Participation and cooperation of our suppliers is crucial for LG Energy Solution to achieve carbon neutrality across the entire value chain by 2050. The SRM team is promoting energy transition activities for primary suppliers of major materials, such as cathodes and anodes, with the goal of converting all electricity used in the production of materials that we purchase to renewable energy by 2030. When we first launched our plan for transition, there had been no precedents in Korea, so we had to take the initiative to come up with strategies and set up implementation measures.

We referred to outstanding cases around the globe and asked for help from experts within the company in different areas, such as procurement and energy, to establish a roadmap for the transition to renewable energy in our supply chain and to commence the execution. We hosted our first information session on renewable energy for suppliers in the third quarter of 2021 where we explained the rationale and background for the need for a transition to renewable energy. Also, information on policies and trends of carbon neutrality in each nation was shared, and we focused on promoting awareness and interest in RE100 and reaching a consensus with each supplier. Afterwards, through regular meetings with each of the suppliers, we have been sharing our know-how in transition to renewable energy and discussing the latest trends in policies and regulations to set energy transition goals and means of implementation together with our suppliers.

What challenges do you face on in the transition?

Systems and environments for supply and demand of renewable energy vary by country and region. Furthermore, each supplier has different climate related policies hence shows different pace in proceeding with the goal and adopting renewable energy, which can be challenging for us to coordinate. However, together with our suppliers, we are going to overcome these obstacles and continuously promote RE100 in accordance with the global trend of carbon reduction.

Diversity, Equity, Inclusion

As a global leader in the battery industry, LG Energy Solution is building an organizational culture of DEI (Diversity, Equity, Inclusion) with the employees, under the philosophy that the employees are the most important customers. As the proportion of employees working overseas in the US, Poland, and China reaches 70%, we are making more efforts to recruit and foster global talent. We pursue an organizational culture based on the respect for diversity by not engaging in discrimination due to the differences of each employee, a culture based on the equity principles of offering opportunities to all and not discriminating according to the social status, and a culture based on inclusion where mutual understanding and respect among the employees are present.

What kind of organizational culture is LG Energy Solution pursuing?

Organizational Culture of Having Respect for Diversity

“LG Energy Solution respects diversity.”

LG Energy Solution is recruiting talents from various countries, including Korea. As of 2021, the proportion of overseas employees at the global business site is about 70%, and the proportion of overseas employees is higher than that of domestic workplaces. When considering the future additional investments and expansions in the North American regions, the proportion is expected to grow, and we are planning to work with various global talents while communicating with them in real-time.

"LG Energy Solution values gender proportions."

As the result of LG Energy Solution’s active efforts to hire female talents, the number of female employees in the domestic business sites has reached 1,471 in 2021, showing an increase of about 63% in 2 years from 903 in 2019. In addition, we are in the process of creating a stable work environment for female employees by instituting HR policies such as leave of absence, treatment support for fertility treatment and maternal protection for adopted children.

"LG Energy Solution do not 'discriminate' just because something/someone’s 'different'."

LG Energy Solution will constantly increase the employment rate of the disabled by operating a disability-oriented subsidiary called Areumnuri(The Beautiful), and will continue to create a culture where all employees can work together and pay respect while eliminating discrimination. As of 2021, there were a total of 205 employees with disabilities, with 173 employees affiliated under Areumnuri, who performed the tasks of cleaning, steam car washing, working at cafeteria and cafes, managing parking lots and managing consumables at the business sites of Ochang, Daejeon, and Yeouido.

Organizational Culture Based on Equity Principle

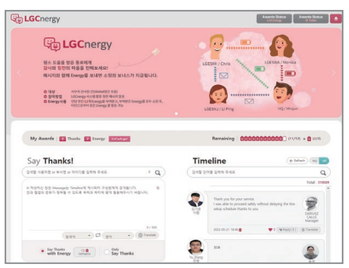
"LG Energy Solution has established equity as the fundamental principle of all personnel management."

LG Energy Solution employs talented people without discrimination based on race, nationality, gender, religion, disability, region, and affiliated organizations, and conducts programs for a wider variety of personnel. The major production corporations conduct various programs such as internships, contests, and meetings with professional experts through industry-academic cooperation with nearby prestigious universities, and hire talented people of non-capital areas to help develop balanced regional development and to reduce unemployment rate among young people. Also, all employees are given equal opportunities of employment, promotion, compensation, and training based on their talents and abilities. They are not discriminated according to gender, age, race, religion, labor union activities, disabilities, pregnancy, marital status, social status, etc. As of 2021, the proportion of non-regular workers in LG Energy Solution is less than 1%, and 100% of employees who had continued to work will be converted to the status of regular workers.

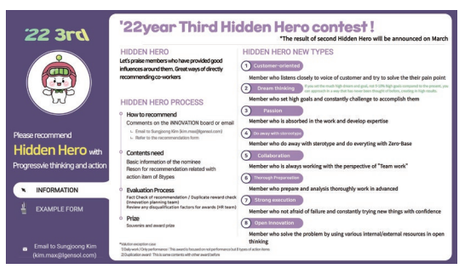
Organizational Culture Based on Inclusion

"LG Energy Solution will build an organizational culture based on mutual understanding and respect among the members."

LG Energy Solution is creating a horizontal corporate culture in which the names of all employees are unified under the honorific title without any regard for duty and position, individuals are respected as work experts, and opinions can be freely expressed. "EnTalk" is a communication platform that allows employees to directly express their opinions to the CEO, and "LGCnergy" and "Hidden Hero" are platforms that express smooth cooperation and gratitude among employees. In order to create a “positive workplace culture,” we are expanding a culture of routinely sending positive messages such as “Thank you and well done.”



LGCnergy



Hidden Hero

How do you train your employees?

LG Energy Solution provides programs to foster employees who can play a leading role in ensuring transparency and equity of the company, and actively supports the transfer of prospective retirees in preparing for an aging society. A representative program is one that fosters entrepreneurs who fulfill their social responsibilities and roles. There are integrated training activities of customized experience, exposure, and education that are conducted by comprehensively analyzing the work experience and performance, strengths and shortcomings of candidates who are considered for CEO and business manager positions. And in line with the rapid growth of the company, we have established and operated our own leadership development system so that the employees can effectively demonstrate their leadership. It provides information and implementation guides necessary for management of performance and organization in onboarding processes that can help successfully transition to positions immediately after being appointed, and provides leadership contents through Micro Learning Platform, which enables self-learning.

We are also conducting new employee trainings aimed at promoting a sense of affiliation and pride in the company, understanding of the business and products, and adaptation to the work environment. To help new employees adapt quickly, the Day 1 program is available at all times, both face-to-face and non-face-to-face, and applies Gamification and Metaverse technologies that take into account the characteristics and digital trends of the MZ generation to help ensure that soft-landing progresses effectively.

LG Energy Solution operates LBA (LGES Battery Academy) to enhance the job capacity of its employees. LBA is a professional training program covering sectors on production, technology, quality, R&D, purchasing· SCM, Sales· PM, and DX. It consists of a total of 167 courses, and is available in overseas companies such as China, Poland and the United State. We have also established IBT (Institute of Battery Technology) to provide early training to new promising talents and systematically foster battery experts.

In addition, as the global business expands, we make efforts to develop the head of the corporation by leading business in overseas company with crowning achievements. In order to strengthen the business and leadership capabilities for each head of the corporation, we design and closely manage individually customized development plans. Additionally, in order to respond to the demand for overseas employees, we are operating programs that can enhance foreign language skills and cross-cultural acceptability.

LG Energy Solution's new employee training

What do you do to make better organizational culture?

Under the philosophy of "the employees are the most important customers," LG Energy Solution plans and conducts activities of organizational culture through various channels, such as EnTalk (CEO Hotline), employee experience survey, and Junior Board.

On January 3, 2022, we officially announced, “6 major tasks of organizational culture (reporting and meeting, autonomous Work Culture, horizontal culture, positive culture, Enjoyable Work workplace, and sharing culture),” and employees who have experienced rapid application of their opinions began to more actively express their opinions.

In the case of reporting, the reports are replaced by written reports if verbal discussion is not necessary, and such reporting guidelines are attached and guided in the conference rooms in all business sites. In addition, considering the needs of employees who want to decide the working hours on their own, we have set up more than 20 remote workplaces in Seoul and are expanding them to Daejeon and Ochang, thereby putting autonomous work in a settlement stage.

LG Energy Solution continuously conducts employee satisfaction surveys to develop activities of organizational culture that is based on employee experience. Our employees experience activities as follows.

01 Establishment of Entalk

- The CEO listening to the uncomfortable experience of the employees and quickly taking measures to improve upon it
- 412 ideas posted for improvement since its establishment in November 2021 (as of June 2022)
- Proposing various systems to increase employee satisfaction (fertility leave system, support of treatment expenses, etc.)

02 Employee Experience Survey

- Conducting survey for the first half of the year, done by all domestic and foreign office workers
- Constituting 16 questions related to 6 major tasks of organizational culture
- Revealing the survey results to all company employees and sending individual reports to the head of each organization
- Distributing all leaders a "Remote Work Guide" that reflects survey results
- Supporting developments of organizations that need or apply for improvements of organizational cultures
- After conducting the survey for the second half of the year, reflecting the evaluations of individual leaders in charge, based on the degree of improvement

03 Operation of Junior Board

- Selection of one employee for each department (110 in total), acting as a 'Change Agent'
- Department Representatives holding monthly meetings with the CEO and reflecting ideas of improvement (Drawing 6 major tasks of organizational culture, system improvement, etc.)
- Most of the major decisions related to organizational culture reflecting the opinions of the Junior Board

04 Improvement of Work Environment

- Securing 20 or more shared offices in capital areas for remote work
- Using the lounge on the 63rd floor of Park One (holding various events such as screen golf, massage, meditation, special lectures, and small concerts)
- Attaching meeting and reporting guides in all conference rooms

6 key activities of the 2022 organizational culture

We boldly remove and improve things that serve as an obstacle to our success in performance.
Let us maintain our mental stability and stay healthy to focus on our key tasks!

1 Reporting and meeting culture focused on key tasks

Prohibit handsomely decorated reports
Allow only discussions and decision-making during meetings
* Share and become well-versed with meeting materials in advance

2 Autonomous working culture solely focused on performance

Work at the most convenient place where one's productivity peaks (complete flextime, remote working)

3 Horizontal culture with no titles attached

Everyone is addressed by their names anytime, anywhere, regardless of their position or rank

4 Positive culture full of gratitude and praise

Express gratitude through LGCynergy
Establish the sandwich speech (commendation - honest feedback - encouragement)
Embrace meaningful failures

5 A pleasant workplace culture that cares for physical and mental wellness

Focus at work and relax outside of work

6 Sharing a culture that conveys love to neighbors

Full support for volunteering

What does LG Energy Solution do to create "a company that employees enjoy working for"?

In order to make a “company you want to go to first thing in the morning,” LG Energy Solution is conducting various activities to maximize the positive experience of the employees. It plans and provides healing programs for the employees to find wellness and supports stress care and mental counseling so that employees can recharge through rest and relieve mental discomfort. We are also operating a Family Friendly program that takes care of employees and their families, and Joyful Energy events to promote fellowship and boost morale. Additionally, we are preparing a system to create a Share Together culture to express love to your neighbors and feel gratitude and happiness.

Family Friendly	• Totoga (Saturday Office with Family) invitation event, special lecture on children's education, invitation event for parents of overseas employees during family month, etc. • Caring for employees by life cycle (childbirth, admission, college entrance exam, children's day, etc.)
Wellness	• Healing Day (every wednesday), providing experience in outside healing centers for employees, non-face-to-face stress detox programs, stress measurement events, meditation, yoga, and pilates, mental counseling rooms, refresh complex, and mini-library • Caring for employees by situation: Concierge services for employees going on overseas business trip and overseas employees, concierge services to support early settlement of new employees, and self-quarantine kits for Covid-19 confirmed cases, etc.
Joyful Energy	• Sports competitions (basketball, golf, etc.), hobby classes, the managers are giving (gifticons provided by managers for cheering up), test-drive of EVs, talk concerts of celebrities, baseball season ticket events, thank-you events for praising and collaboration employees of the month, etc. • Lottery event to spread 6 major tasks of organizational culture • Increasing identity and sense of belonging for Ensolers: Ensol's production and sales of goods, and emoticon events
Share Together	• Paid leave system for volunteering • Planning and operating volunteer groups led by employees, etc.

ESG by Me

We asked Lisa Lee of Joyful Workplace Design Team

What kind of work does Joyful Workplace Design Team do?

The Joyful Workplace Design Team is engaged with activities that provide employees with “experiencing diverse happiness at work.” We help the employees immerse themselves in their work and experience growth.

How do you define “Joyful Workplace” in your team?

There are various definitions of companies that people want to work at, but following the words of CEO Youngsoo Kwon, "company you want to go to first thing in the morning" is the aim of the Joyful Workplace Design Team. To this end, the Joyful Workplace Design Team prioritizes making employees feel that they are valuable members of the company and provides activities like mental and physical health care, family-friendly activities, boosting of employee morale, and strengthening of fellowship. In addition, we are planning community impact activities that employees can participate in, so that they can feel greater happiness by sharing.

How does LG Energy Solution care labor relations?

LG Energy Solution considers employees and labor unions as important partners in business, and practices organizational culture benefiting both labor and management based on trust from each other. Our employees are free to join and carry out the activities of the labor unions, and we conduct business-oriented and productive collective bargaining every year so that all employees can experience win-win situation. The Labor-Management Committee is also held every quarter in accordance to the legal standards, and the employees' difficulties and improvement of the working environment are discussed. Any changes that have been decided or changed through collective bargaining or Labor-Management Committee will be immediately notified to the employees, and the changes have been applied 100%.

Human Rights Management Policy

Based on our management philosophy of "people-oriented management," LG Energy Solution values the assurance and respect to the rights of dignity, freedom, and happiness. In this regard, we support human rights and labor-related international standards, such as Universal Declaration of Human Rights, human rights and labor principles of UNGC (UN Global Compact), UNGP (UN Guiding Principles on Business and Human Rights), and labor acts of ILO (International Labor Organization) and comply with the labor laws of all countries and regions where we conduct our business activities.
LG Energy Solution intends to apply the global human rights and labor principles to all business sites and improve the risks of human rights and labor through continuous monitoring. Moreover, we will share the principles with all of the stakeholders, such as the employees, customers, and suppliers, who are directly affected by LG Energy Solution's business activities and contribute to improving and spreading the awareness.

Junior Board meeting

Healing Day

Totoga (Spend Saturdays with Your Family)

Employee basketball tournament

Global Human Rights & Labor Policy

Category	Contents
Humanitarian Treatment	We shall strive to create a safe working environment for all employees by respecting their dignity and preventing them from inhumane treatment or threats, such as mental or physical force or abusive language
Prohibition of Forced Labor	We shall prohibit unfair confinement of mental or physical freedom or forced labor against the will of the employees. We shall not demand the transfer of personal identification, passport or the original copy of labor permit as an employment condition.
Prohibition of Child Labor	We shall comply with the minimum employment age stipulated by the laws of each country and region and prohibit child labor of age 16 or under. When employing an adolescent whose age is 18 or under, we shall not offer a hazardous task in terms of occupational safety (including night shifts and overtime).
Nondiscrimi-nation	We shall give all employees equal opportunities for employment, promotion, compensation, and training, and shall prohibit all types of discrimination according to gender, age, race, religion, labor union activities, disabilities, pregnancy, marital status, social status, etc.
Working Hours	We shall comply with the regulations regarding regular working hours, overtime and holidays stipulated by the laws in each country and region and shall not force anyone to work overtime outside their regular working hours. If anyone works overtime (within the limits set by the laws), we shall pay out the overtime compensation, in accordance with the pertinent laws.
Wage and Employee Benefit	We shall pay out wages exceeding the minimum wage stipulated by the laws in each country and region to all employees.
Freedom of Association	We acknowledge the freedom of association and right to collective bargaining, which are guaranteed by the laws in each country and region. We shall create an environment where all our employees can communicate easily without the fear of threats or retaliation. We shall not unfairly treat anyone for forming, joining or participating in a labor union.

ESG by Me

We asked Kil Ja Lim of the representative of Junior Board

What is the JB (Junior Board) system and what role does it play?

The JB system is a representative organization of LG Energy Solution's employees, with the goal of "making a company where I want to work at and creating an environment where I can do my job better." The board listens to various stories of the employees and constantly speak up.
As a 'Change Agent', i am responsible for informing people about areas that need improvement.

What is the most memorable change in your company through JB activities?

The most memorable change was when efforts were made to improve the in-house culture, such as liberalizing clothes in 2020, extending parental leave by 2 years in 2021, opening a daycare center for LG Energy Solution employees, and preparing an environment where profits are donated through the sales of LG Energy Solution goods in 2022. Like the Indian rituals for rain which will continue until it rains, we will not give up and "speak up" so that the opinions of employees are reflected in the improvement of the organizational culture through online communication space for employees. In addition, we will create an environment where current JB activities can lead to the next JB and create a better organizational culture with all of the employees.

04

ESG Inside

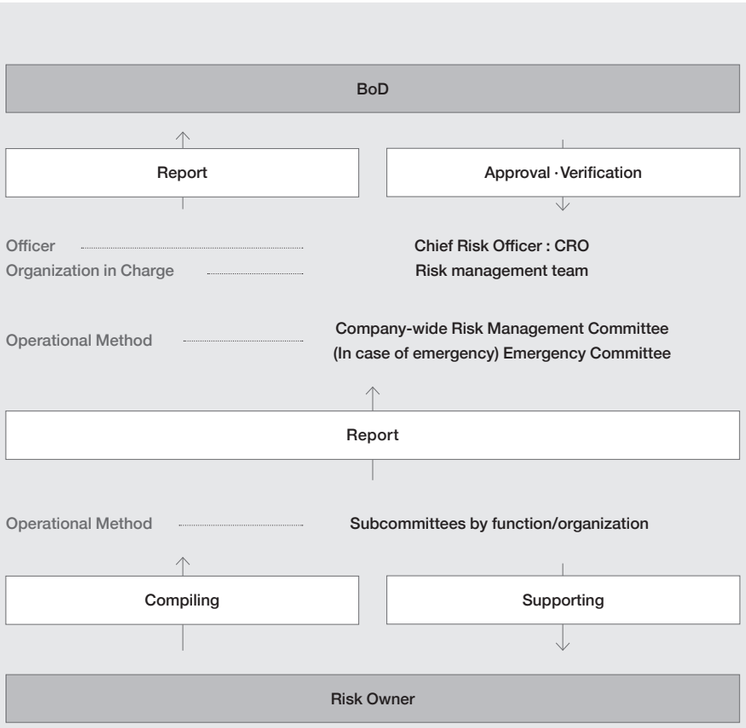
LG Energy Solution continues to unfold a wide array of different activities that serve as the fundamentals of ESG management and strives to embed them. We will further strengthen our ESG management in the areas of risk management, governance, EH&S, compliance, information security, Jeong-Do Management, R&D, corporate social responsibility (CSR), shared growth, global initiative, and communication.

Risk Management

By establishing a company-wide crisis management system, LG Energy Solution analyzes risks in quality, safety, supply chain, business, finance, society, and environment, and conducts countermeasures accordingly. We operate a dedicated organization responsible for proactive risk management. In particular, we selected quality, environment and safety, and supply chain risks as core risks to strengthen our quality control system, improve the environment and safety in accordance with the expansion of business sites, and build partnerships to stabilize the supply chain. We plan to continuously work on the risk management system to minimize risks from business operation.

Company-wide Risk Management System

LG Energy Solution operates a dedicated risk management organization for proactive management of risks. We appointed chief officers in this area to prioritize the safety of employees, local communities, and customers for disaster prevention and proper crisis management. Particularly, to ensure a specialized risk management system, the chief officer for environment and safety, information security, and compliance is appointed as Chief Risk Officer (CRO), and that for quality is appointed as Chief Quality Officer (CQO). Chief officers elected by the Board of Directors (BoD) usually chair the crisis management committee and serve as the head of the emergency response committee or executive secretary in case of an emergency and support decision-making of top management.
In general, the crisis management committee focuses on developing a company-wide risk inspection and response plan. Each subcommittee that manages individual risks monitors the core risks selected by the company and oversees risk reduction/improvement and preparedness activities.
In the event of a company-wide crisis, we operate the emergency committee, the top decision-making organization of LG Energy Solution, to respond to the crisis.



Risk Identification and Management

Identifying Risks
LG Energy Solution operates a company-wide risk management system to raise sensitivity about potential risks that could materialize into crises and to identify and reduce risks. We pinpoint risks in various areas by analyzing our mid- to long-term strategies and work processes and conducting interviews. To cope with the rapidly changing business environment, our subcommittees discuss material issues and what the company can do in response. We also focus on assessing changes in the business environment before devising mid- to long-term strategies and business plans to prevent and reduce risks.

Response to Risk and Follow-up Management
LG Energy Solution operates a company-wide crisis response system in the event of a crisis in accordance with the crisis response manual. We set up an emergency response committee and operate a comprehensive situation room to assess preliminary damages and support the recovery of accident. Once the crisis is over, the risk management organization monitors the process of implementing measures to prevent recurrence and verifies the results. The organization also lists up inventory in emergencies and impacts, develops scenarios including the decision-making process of the emergency response committee, and conducts mock training sessions to improve its crisis response capabilities. Furthermore, we prevent the recurrence of similar crisis by updating our manuals and systems for crisis response and horizontally carrying out improvements.

Strengthening the Risk Management System

LG Energy Solution acquired the business continuity management system (BCMS, ISO 22301) certification for its headquarters and manufacturing plant in December 2021. Our resilience to crisis and incidents has been objectively and internationally certified. We further plan to obtain additional certifications for our overseas business sites by establishing practical risk management frameworks and enhancing our risk management duties.

Identification of Major Risks and Mitigation Action

LG Energy Solution manages quality risk, occupational safety risk, and compliance risk as core risks.

Quality Risk Management
We strengthen quality control based on the system and operate an organizational system specializing in quality control across the company.

Occupational Safety Risk Management
We put the utmost effort to protect customers and employees by operating the occupational safety committee and safely managing the workplace environment of all business sites.

Compliance Risk Management
We regularly identify legal obligations of the relevant division in the compliance subcommittee and the company, and we hold regular/ad hoc educations and inspect employees' compliance to prevent risks from breach of laws. In this manner, we prevent unfair trade, price fixing, trade secret infringement, and other compliance violations in a preemptive manner.

In the event of a critical crisis, each division quickly contacts the crisis management committee at the headquarters. When it comes to responding to core risks, the life and safety of customers, communities, and employees are the top criteria for judgment. The risk management committee, in evaluating the risk grade, reviews the impact on crisis by taking the sustainability factors, such as life and environment, not just the financial impact.

Category	Risk Factors	Potential Impacts	Mitigating Actions
Quality Risk	Quality Control	• Need to manage quality risk of all types of cell products for use by consumers	• Operating a company-wide quality control organization, aimed at strengthening system-based quality control and optimizing quality control • Actively engaging in quality issue discussion with customers/ governmental agency • Conducting recall process based on decisions made by the recall committee
Safety Risk	Occupational Safety Management	• Damage to corporate competitiveness due to lowered credibility in case of chemical accidents or legal violations • Financial loss and damage to corporate image in case of noncompliance with laws and regulations	• Strengthening chemicals safety education for hazardous substance handlers • Strengthening preemptive filtering of substances exceeding legal standards for chemical substances at global sites, and identifying alternative substances to hazardous substances • Regularly inspecting occupational safety of global business sites, and carrying out special and planned diagnoses • Strengthening company-wide occupational safety management system by holding the CEO-led occupational safety committee • Enacting company-wide safety and environmental policies and regulations, strengthening risk and performance management through the construction of the safety and environment portal
Business Risk	Management of Order	• More needs for systematic management due to the increased number of contracts and their larger scale	• Establishing company-wide order management system • Strengthening company-wide examination standards for orders (e.g. securing profitability, responding to risk) • Securing profitability through management from the quotation stage • Establishing the response basis to risk of loss
	Intensifying Competition	• Intensifying competition in cell market and change in competitive composition	• Securing technological lead by upgrading capabilities in manufacturing and R&D • Securing competitiveness in new business fields through diverse channels such as open innovation
	Change in Production and Sales Environment	• Poor mid- to long-term growth and inefficient resource operation can result from an inappropriate business portfolio	• Distribution of resource, mainly in fostering businesses, through inspection of company-wide business portfolio • Focusing on inspecting changes in business environment when setting up mid- to long-term strategies or business plans • Providing response measures to each major index, such as supply and demand of materials and parts and currency exchange rate • Inspecting short-term business environment and risk factors of the headquarters and overseas subsidiaries • Fundamental activities to increase competitiveness in stagnant businesses
	IT System Management and Information Security	• Businesses of LG Energy Solution are operated/managed based on IT systems, and leakage of confidential information and data manipulation can negatively impact the manufacturing/logistics process • Insufficient management of internal information may lead to potential legal responsibility issues or decreased competitiveness	• Upgrading company-wide information protection organization and operating information protection council • Establishing a digital innovation system through digital transformation • Strengthening database access control system • Training employees on information security and data management
Financial Risk	Investment	• When investment fails to achieve profit gain due to wrong investment or changes in business environment, such is likely to cause financial loss and deterioration of cash flow	• Improving investment efficiency and taking early response to risk through investment management system • Reviewing investment on the corporate level and executing corporate investment committee regarding large-scale investments • Strengthening change management by inspecting progress of the major on-going investments
	Finance	• Global business expansion can be exposed to various risks such as market, credit, and liquidity risks	• Managing risk of each division in charge according to the policy approved by the management committee • Identifying and evaluating financial risk in advance through collaboration between field divisions
Social/ Environ-mental Risk	Response to Changes in Climate Change Policies	• Increase of production costs caused by operational expenses due to reduced investment in energy conservation	• Making investment decisions for energy reduction based on the priorities for maximum effects

Governance

The 2021 BoD of LG Energy Solution consists of two inside directors, one non-standing director, and four outside directors. In order to carry out the checks and balance function of the BoD, we keep the ratio of outside directors to more than majority. Each director serves a tenure of three years, and may be reappointed by considering activities and achievements.

As of June 2022

Inside director	Youngsoo Kwon	CEO, BoD Chairperson, member of the ESG Committee Current CEO of LG Energy Solution, former President of Energy Solution Company of LG Chem, COO of LG Corp.
	Changsil Lee	Member of the Internal Transaction Committee Current CFO of LG Energy Solution, former Management Lead of Energy Solution Company of LG Chem
Non-standing director	Bongseok Kwon	Current COO of LG Corp., former CEO of LG Electronics
Outside director	Meenam Shinn	Chairperson of the ESG Committee Current outside director of S-Oil
	Meesook Yeo	Chairperson of the Internal Transaction Committee Current professor of Hanyang University Graduate School of Law
	Seungsoo Han	Chairperson of the Audit Committee Current professor of Korea University Business School
	(Vacant)	
Average term of directors 11.5 months*	**Average age of directors** 57.9	**Completion of tenure** Director Youngsoo Kwon (March 2024), Director Meenam Shinn (March 2024), Director Meesook Yeo (March 2024), Director Seungsoo Han (March 2024), Director Changsil Lee (March 2025), Director Bongseok Kwon (March 2025)

* Calculated based on the incumbency since the split-off in December 2020.

• One out of four positions for outside directors is vacant after Director Dukgeun Ahn completed his tenure on May 10, 2022. A new outside director will be appointed in accordance with the procedure established by the Commercial Act.

Possessing deep understanding in company management, LG Energy Solution's outside directors are experts in business and the lithium-ion battery industry, which is the company's major scope of business, as well as finance, law, and international commerce. We actively respond outside directors' requests for information about management's decision-making through the BoD secretariat and related departments to maximize their expertise. We also hold a briefing session to assist them in understanding the major issues prior to BoD meetings. In addition, to enhance the expertise and efficiency of the BoD, we operate four committees under the Board of Directors: the Audit Committee, the Nomination Committee for outside Directors, the Internal Transaction Committee, and the ESG Committee.

Audit Committee

In accordance with the Audit Committee Regulations, the Audit Committee audits the accountings, businesses, and job implementation of directors, and actively engage in activities for internal control, such as demanding sales reports, investigating the company's business affairs and financial status, and receiving audit reports prepared by external auditors. All members of the Audit Committee are outside directors to ensure independence.

Nomination Committee for Outside Directors

The Nomination Committee for outside Directors appoints two of the three members as independent directors so as to ensure the fair selection of candidates for outside directors. The Committee recommends candidates for outside directors with expertise and competencies that meet the interests of stakeholders, including shareholders, under the “diversity principle”, which prevents independent directors from having a specific common background or representing a specific interest.
The Committee especially ensures there is no discrimination based on gender, nationality, or race.

Internal Transaction Committee

The Internal Transaction Committee examines the transactions with the largest shareholder and affiliated person under the Commercial Act, transactions subject to regulation of defraudation of private interests under the Fair Trade Act, and internal transactions subject to approval of the BoD under other pertinent laws. At the Internal Transaction Committee, three out of the four members are outside directors.

ESG Committee

The ESG Committee establishes basic policies and strategies of ESG fields, such as environment, safety, CSR, customer value, shareholder value, and governance, and deliberates on mid- to long-term goals.
At the ESG Committee, four out of the five members are outside directors.

Operation of Board of Directors

The BoD officially meets at least quarterly and hosts ad hoc meetings when necessary. During 2021, along with 100% attendance, the Board held 19 meetings that approved 51 agendas and were reported 12 issues.

Evaluation and Remuneration of Board of Directors

We independently assess individual directors, according to their activities and performances when their term ends. The results are reflected in the decision of reappointment. Directors receive remuneration within the pool approved at the shareholders’ general meeting. Remuneration for inside directors depends on their performance assessment. Incentives are provided according to the comprehensive evaluation of quantitative indicators like sales and qualitative indicators such as the evaluation of key projects and implementation of mid- to long-term plans. In 2021 (based on term 1 ending in 2020), the total remuneration pool for BoD approved at the general meeting of shareholders was KRW 8 billion, and the total payout to directors was KRW 3 billion. The entire remuneration pool for BoD approved at the 2022 general meeting of shareholders was KRW 8 billion.

Environment, Health&Safety (EH&S)

Environment, Health, and Safety System

LG Energy Solution has established a systematic EH&S management system based on ISO 14001 (environmental management system), and ISO 45001 (occupational health and safety). We also established an environment, health, and safety policy to declare our consistent commitment to environment, health, and safety management. We have in-house safety and environment regulations and work guidelines for each business site to practice safety and environment management. Leaders actively engage in on-site management activities, to prevent accidents. In case of an environmental/safety incident, employees are evaluated based on the severity of the accident to apply practical preventive measures.

* **ISO 14001 certified business sites: Ochang, Daejeon, Gwacheon/Magok, LGESNJ, LGESNA, LGESNB, LGESWA, LGESMI**
* **ISO 45001 certified business sites: Ochang, Daejeon, Gwacheon/Magok, LGESNJ, LGESNA, LGESNB, LGESWA, LGESMI**

EH&S Policy

EH&S Policy

LG Energy Solution acknowledges that environment, health, and safety are the fundamental factors for securing competitive edge, and thereby declares to faithfully practice the following principles for the continuous improvement of environment, health, and safety performance based on clear goals and bold actions.

- We comply with laws and regulations, and establish and operate environmental safety regulations that lead the domestic and global industries.
- We continuously pursue innovation throughout the entire production process to provide eco-friendly products and services.
- We create a safe and clean working environment and build a corporate culture in strict compliance with fundamental principles.
- We proactively support our suppliers and local communities to improve the safety and environment based on their social responsibility.
- We disclose information transparently and communicate sincerely with our stakeholders.

In order to comply with this policy, we put environment, health and safety first in all business activities.

Environment, Health, and Safety Governance

The EH&S Committee of LG Energy Solution is a body that makes major decisions related to safety and environment. The Committee consists of senior managers in charge of EH&S issues of the headquarters and business sites. The Committee convenes each year to discuss the major EH&S issues of the company, outcomes of actions implemented, and future plans. The Committee sets the direction for leading the EH&S policy and reinforces responsible management. LG Energy Solution has put in place an Occupational Safety and Health Committee at each business site consisting of the same number of labor representatives and management representatives to deliberate on and resolve primary EH&S issues. The Committee prevents any risks that can occur at business sites and manages the health of employees.
In addition, LG Energy Solution discusses measures to improve EH&S and shares exemplary cases from a business site through EH&S internal consultation channels, leadership meetings, and workshops.

Strengthening EH&S at Business Sites

The overall expectations for EH&S management in the private sector have increased as a result of reinforced EH&S regulations. Acknowledging that professional EH&S management is necessary, LG Energy Solution intends to consistently build its capabilities for practicing ESG and eradicating severe disasters.

Reestablishment of Regulations and Systems

LG Energy Solution reestablished its risk diagnosis system in an effort to eradicate fundamental incidents. We implemented the responsible safety zone inspection system in 2021 to reduce gray zones from inspections and performed specialized inspections. We also published and distributed the Risk Inventory Book that conveys risk types by process and standard safety measures to monitor whether systematic inspections and development activities are conducted properly.
In addition, we reestablished our EH&S regulations and systems in tandem with strengthened regulations, like the Severe Accident Punishment Act. Our business sites independently carry out inspections related to legal requirements for EH&S.

Setting of Global Standards for EH&S Management

LG Energy Solution intends to create a world-class EH&S system by organizing standards and technological guidelines and implementing them in our business sites. The headquarters will periodically diagnose whether EH&S goals and management are fulfilled in a systematic manner, and it will conduct special inspections on the issues raised to check employees' compliance with company regulations and national laws and make corrections for identified risk factors.

Internalization of EH&S Management

Employees' awareness is of the utmost importance for EH&S management. Without employees' participation, it is impossible to achieve global highest standard of health and safety management system even with outstanding health and safety system, devices and facilities. To enhance employees' awareness of safety, LG Energy Solution identifies "near misses" and shares via social media how such risks can be improved. This is done in conjunction with a report and video on the best practice of the month. Our business sites also use large screens to train its employees on hazard predictions.
We also set the "Environmental Safety Rules" to ensure the seven fundamental yet essential standards are practiced in business sites.

Reinforcing Healthcare Activities for Employees

LG Energy Solution plans to establish an in-house medical clinic and provide employees in all business sites with professional medical services with the aim to help employees improve and maintain their health. We also have a counselor on staff to contribute to nurturing an environment where employees can look after both their physical and mental health. We will keep developing our capacity for EH&S management to eradicate fundamental occupational accidents through our employee health initiatives.

Response to Product and Environmental Regulations

With stronger product and environmental regulations and increasing customer demands, mainly in EU, it has become critical to identify and manage chemicals in materials and products and ensure eco-friendliness of a product. To provide our customers with green and competitive materials and solutions while contributing to a sustainable future, LG Energy Solution has set a vision of "Eco-Product Solution Partner" to ensure 100% eco-friendliness by 2022

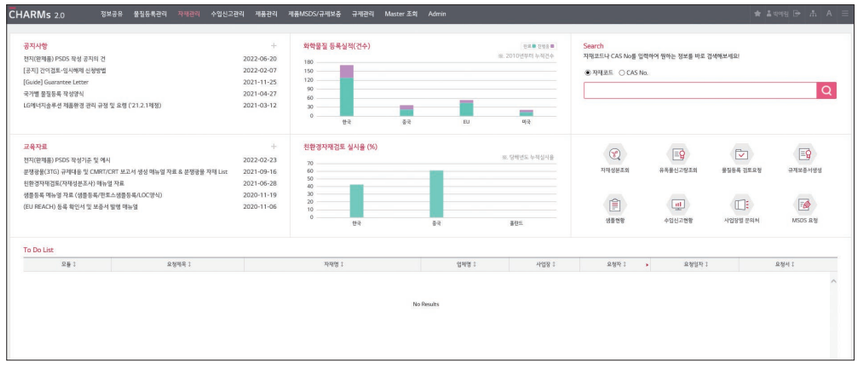
Monitoring Environmental Regulatory Trends and Establishing Product Stewardship Process

LG Energy Solution examines and monitors environmental laws, regulations, specifications, the voices of customers (VOCs), and accident cases related to our products to determine the direction and level of eco-friendly product design. We built a database for chemicals used by domestic and global in order to prevent any violation of international regulations. We also take preemptive measures to reduce risks related to chemical regulations in our global business. The purchasing department and environmental safety department communicate periodically with suppliers regarding the eco-friendly management of materials, whereas the quality department and CS team guarantee the compliance with chemical regulations required by the relevant country and clients.

Strengthening Chemicals Management System

LG Energy Solution operates the Chemical Assurance and Regulation Management system (CHARMs 2.0) to take legal action and improve product safety throughout all processes, from purchase and warehousing to use, shipping, and disposal of chemicals. We carry out strict management of environmental hazards from the raw material stage according to the "Eco-SCM." We also block all potential risks in advance using CHARMs 2.0 by reviewing chemical component information and compliance assurance, as well as harmfulness and legal response information before making orders.

In addition, we are sharing up-to-date information on global product eco-friendliness, safety, and harmful chemicals regulations with quality management staff. Starting with the production site in China in 2021, we laid a foundation to ensure eco-friendliness in chemicals by overhauling the chemical processes and spreading the application of CHARMs 2.0 in production sites in the US and Poland in 2022.



CHARMs 2.0

Air Pollutant Emissions Management

LG Energy Solution controls and discloses air pollutant emissions, including sulfur oxide (SOx), nitrogen oxide (NOx), and PM10, aimed at minimizing the generation of pollutants. We set a company standard for discharging air pollutants higher than the legal standard, and we periodically repair deteriorated regenerative thermal oxidizers (RTOs) to reduce air pollutant emissions. We also switched our boilers to low NOx burners, and we use IoT equipment for controlling the air quality of business sites in real time.

Water Conservation

At LG Energy Solution, we design a risk management system for water conservation in tandem with the growing significance of water source protection. In order to secure stable water supply, we conduct analysis of the main use of water and continue reducing water usage through consistent process improvement. In addition, we have established a water-related risk evaluations, a proactive response strategy, and managed wastewater by applying more stringent standards compared to the legally permissible standards for water pollutants.

Compliance

LG Energy Solution has appointed a compliance officer at the same time as it was established in December 2020 to ensure fair and transparent work and secure the company's sound development and customer trust. Since January 2021, we have established and implemented compliance management standards. As a result of actively exploring the requirements of customers and society and striving to establish a compliance management system that is in line with global standards, in November 2021 we obtained ISO 37301, the battery industry's first international standard certification for compliance management.
The compliance officer oversees the compliance support and management activities of LG Energy Solution, and reports the evaluation of the efficiency to the BoD every year. We have a Compliance Secretariat in place under the Legal Department where we appoint a "compliance manager" for each risk area to take responsibility for compliance control activities on behalf of the compliance officer.

Strengthening Compliance Education

LG Energy Solution develops and operates various compliance education programs for different positions to raise employees' awareness of compliance. We also carry out online compliance education at least twice a year. In the first half of 2022, we offered training courses on the Improvement of Awareness of Persons with Disabilities in the Workplace, Protection of National Core Technologies, Basic Laws You Should Know, Understanding the Revised Fair Trade Act, Responding to the Severe Accident Punishment Act, Environmental Safety Accident Rating and Reporting System, and Anti-corruption. In the second half of the year, we plan to conduct training courses on the Importance of Compliance, Safe Work Environment, Anti-discrimination, Prohibition of Sexual Harassment at Work, and Privacy Protection for all employees at the headquarters. Some of the programs will be held identically in all overseas branches.
We also provide compliance education tailored to different positions, including the management, team leads, and compliance managers, as well as those targeted for high-risk departments, such as purchasing, sales, and R&D departments. Compliance education is also included in the company's self-directed learning tool, LG Energy Solution Battery Academy (LBA). Departments that have had compliance-related issues are required to take additional courses to prevent recurrence in the future.
In addition, we are continuously raising the awareness of compliance among our employees by providing guidelines for preventing the leakage of management information and legal guides for expatriates abroad, as well as a monthly Compliance Newsletter that conveys major risks and regulatory trends. We also publish and distribute LG Compliance Guidelines anchored in Jeong-Do Management, the LG Code of Ethics, for employees to easily understand and respond to legal risks that may arise from performing their duties.

Prevention of Compliance Risks

To minimize management risks and fulfill corporate social responsibilities by fostering a compliance culture within the company, LG Energy Solution ensures that domestic business sites comply with the Global Compliance Standard, as well as focuses on upgrading the compliance management system of overseas branches in China, Poland, and the US. In particular, we regularly study and analyze domestic and foreign laws and regulations and regulatory trends in the industry, and share them within the company. We analyze all compliance risks, encompassing fair trade, environment and safety, and information security, before accomplishing a checklist for individual risks in order to secure the compliance control system's effectiveness. We then carry out a company-wide self-inspection and in-depth inspection for key risks. This is how we periodically manage the compliance of domestic and overseas business sites. Legal risks discovered during a compliance inspection are notified to the head of the relevant department, with appropriate measures, such as suspension, improvement, and correction, taken thereafter. Improvement measures to prevent the recurrence of the same or similar violations are quickly established and reflected in our work. Furthermore, when performing tasks closely related to legal risks, we conduct prior consultations with the legal department by asking for their legal advice.

Information Security

LG Energy Solution protects its crucial information assets as well as information of the stakeholders, including the members, customers and business partners, according to the information security management based on an international standard ISO/IEC 27001. We comply with the applicable laws and regulations regarding information security in and out of Korea, and implement various activities to improve awareness of security. We also take real-time response to internal and external cyber threats, and build the capacity to prevent accidents.

Information Security Management System

LG Energy Solution regards the company's business information, trade secret, and intellectual property, as well as all the information regarding stakeholders, such as personal information of the members, customers and business partners as important information asset, and strives in many ways to protect them. Security risks, such as security threats and information leakage, can impact the company's growth and development. That is why we established a systematic information security management system according to the international information security management system ISO/IEC 27001 in an effort to minimize risks and efficiently focus on security management.

Information Security Policy and Organization

Based on information security regulations, LG Energy Solution enacted enforcement rules that consist of the entities engaged in information security, such as employees, business partners, security organizations, and other related departments. We manage a policy that all members can refer to in fulfilling their duties.
In order to systematically carry out various information security management activities, LG Energy Solution has appointed the Chief Security Officer (CSO) and is operating an information security organization at the headquarters and each business site. In addition, through the information security meetings attended by the security personnel from all domestic business sites and overseas corporations, we continuously share and discuss various security status and issues of each business site. We also hold information security committee meetings attended by the management and executive directors of relevant departments to ensure timely decision-making of the management.

Compliance Response to Information Security

In order to safely process and manage information, such as personal information of employees, customers and business partners, and key technologies and key personnel in Korea, LG Energy Solution complies with the domestic and international laws and regulations regarding information security.
We carry out protective measures to meet the requirements under the Personal Information Protection Act and the Act on Prevention of Divulgence and Protection of Industrial Technology, and we constantly take necessary measures when revisions are made. In the case of overseas sites, we carry out protective measures according to pertinent laws and policies of the host country/region of each corporation, such as the General Data Protection Regulation (GDPR) in the EU or the Network Security Law in China.

Activities to Improve Awareness of Security

In order to improve the members' awareness of security, LG Energy Solution continuously carries out information security education and promotional activities. We conduct information security education targeted at employees at least once a year, and provide customized education by information entity, such as new hires, prospective retirees, business partners, visitors, and national key technicians/personal information handlers. Moreover, we promote information security accident cases to encourage employees to practice security awareness and partake in related activities.

Preventive and Responsive Activities to Information Security Incident

LG Energy Solution operates a security control system from the office area to process facility area, and continuously improves its security level and response capabilities by regularly inspecting and simulating security vulnerabilities and carrying out mock exercises in preparation of internal and external cyber-attacks. In terms of privacy protection, we also conduct a security review in advance to check for any infringement of personal information and compliance issues. In addition, we appointed a privacy officer who is authorized to handle inquiries/complaints and relieve damages associated with privacy.
As of the first half of 2022, LG Energy Solution has had no complaints or cases of data leakage, theft, or loss submitted by regulatory agencies or information subjects. We intend to further block all risk factors in a preemptive manner and bolster our security system to safeguard the personal information of employees, customers, business partners, and stakeholders.

Jeong-Do Management

Jeong-Do Management represents LG's unique code of conduct based on ethical management and steady cultivation of skills and winning fairly. Jeong-Do Management does not only stand for ethics management. True Jeong-Do Management goes beyond ethics management. It encompasses producing substantial results with the knowledge to thrive in a competitive world. The LG Code of Ethics provides all LG Group employees with the standards for appropriate behavior and value judgment, which serves as the foundation for all business conducts of entire LG Energy Solution employees and business sites. The LG Code of Ethics consists of Responsibilities and Duties of Customers, Fair Competition, Fair Transactions, Basic Ethics of Employees, Corporate Responsibilities for Employees, and Responsibilities for the Nation and Society.

Internalization of Jeong-Do Management

LG Energy Solution conducts periodic education on Jeong-Do Management for employees and suppliers. To enhance the practice of Jeong-Do Management by employees, we focused on online activities to spread the culture of Jeong-Do Management and education for primary targets. We promoted the voluntary participation of our employees through the "I AGREE" campaign of Jeong-Do management for all members, including global business sites, and enhanced the interest of our employees through regular publicity activities using the Jeong-Do management portal. We send periodic Jeong-Do Management Letters to team leaders and those of higher ranks to share actual cases that happened recently. We also offer live education online to employees in teams with poor Jeong-Do performance.

2021 Jeong-Do Management
I AGREE Campaign

[Webtoon] Not even e-gift cards!

[Webtoon] Prohibition of Workplace bullying

R&D

LG Energy Solution split off from LG Chem in December 2020 to launch a company specializing in energy solution. Since the initiation of research on lithium-ion battery in 1992, we are now into the 30th year in the battery industry. We have been taking the lead in the global battery market by supplying the world's first mass-produced electric vehicle batteries in 2009; developing futuristic batteries of various forms in 2013, including cables, curved, and stepped batteries; and achieving continuous technological innovation such as developing the world's first free-form battery in 2018. Moreover, we have established production infrastructures in Korea and major global bases such as the U.S., China and Poland, securing a global business network and R&D organizations to realize timely go-to-market strategy and true global management.

Increasing R&D Investment

LG Energy Solution is strengthening its competitiveness in the current businesses, including next-generation batteries that applied high-capacity/safety materials and advanced battery cell manufacturing processes. We are also expanding investments in new technologies and products for the future growth in battery recycling, reuse and next-generation batteries. Our R&D spending accounted for 3.7% of sales in 2021.

R&D Status

Item	Unit	2019	2020	2021
R&D Personnel	Person	2,457	2,576	3,390
R&D Investment Expense	KRW 100 million	3,873	4,220	6,539
R&D Investment Ratio (to sales)	%	4.6	3.4	3.7
New Product Sales	KRW 100 million	75,230	104,173	138,734

※ Figures before the split-off in December 2020 were calculated based on the number of R&D personnel at Energy Solution Company of LG Chem

Efforts for R&D Innovation

As a global leader in the battery industry, LG Energy Solution is securing excellent battery products and technologies through active R&D investment.

Development of Battery Technology for Customer Value Innovation

Automobile Battery
Automobile batteries are supplied in both cylindrical and pouch cell types to meet the demands of global OEM companies. Cylindrical batteries applied to one of the OEMs' vehicles feature the highest energy density and good safety based on the rigidity of a steel can, while the pouch-type battery cells that can be charged within 20 minutes have been applied to premium vehicles, as they can travel from 350 to 400 kilometers on a single charge. Based on its stable technology, LG Energy Solution also focuses on developing and applying long-cell pouch batteries in the MEB platform, the first modular platform for electric vehicles.

ESS Battery
The ESS battery business division developed RESU16H Prime, which comes with the world's largest capacity for a single pack for residential purposes (16 kWh). RESU16H can generate up to 32 kWh electricity when two units are connected in parallel. Recently, the division newly developed RESU Flex which can be installed in various capacities and types. As for the ESS battery for power-grid, the division secured the high operation voltage solution of 1,500 V in line with the power market trend, as well as improved the convenience of installation in customer sites and shortened the installation time by developing factory-assembled products.

Mobility & IT Battery

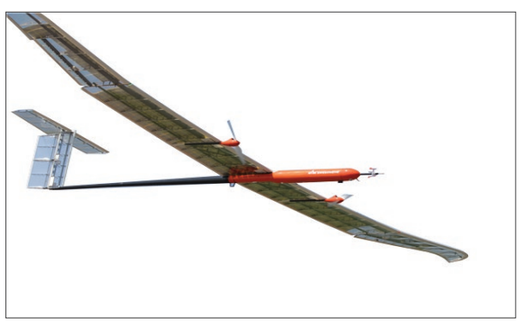
Mobility & IT batteries can be used for an extended time by making small and light IT devices based on “stepped battery” technology, an atypical battery that can supply as much capacity to a small space as possible. We have developed cylindrical batteries that are universal to all existing applications, including EVs, power tools, electric fans, ESS, and satellites. The high-power cylindrical batteries applied to power tools use LG Energy Solution's unique low-resistance technology and high-capacity materials to improve output density and to provide high capacity with a long operating time. In addition, high-capacity cylindrical batteries, which apply LG Energy Solution's high-energy NCM battery technology, feature the highest capacity in the industry among cylindrical batteries of the 1865 and 2170 types. These batteries are generally applied in electric bikes. They are more compact and slimmer than previous versions and are mounted inside bicycle frames. They can travel 150 kilometers with a single charge (as for 500 Wh capacity).

Development of Unparalleled Battery Materials and Process Technologies

LG Energy Solution has three material technologies that differentiate it from others. The first one is high-capacity cathode material technology that enabled us to develop high-energy batteries based on high-nickel content by adding aluminum to NCM cathode material base for the first time in the industry. The second is our innovative technology in silicon oxide anode material that maximizes charging and discharging efficiency by maximizing the silicon oxide content in anode material based on a patented technology. Lastly, the safety reinforced separator (SRS) technology is LG Energy Solution’s patented technology that coated ceramic on the surface of the separator located between anode and cathode materials to increase durability.
The manufacturing process is as important as materials when it comes to producing outstanding batteries. Our differentiated lamination and stacking (L&S) technique reduces wasted space inside cells while maximizing energy density and maintaining battery durability despite long-term charging and discharging. It gives great flexibility in cell design, enabling the batteries to be applied in optimal forms to various EVs, from multi-vehicle exclusive platforms to premium vehicles, greatly contributing to the popularization of EVs. LG Energy Solution is expected to take the lead in the rapidly growing EV market by employing unrivaled materials and process technologies.

Development of Next-Generation Battery Technology

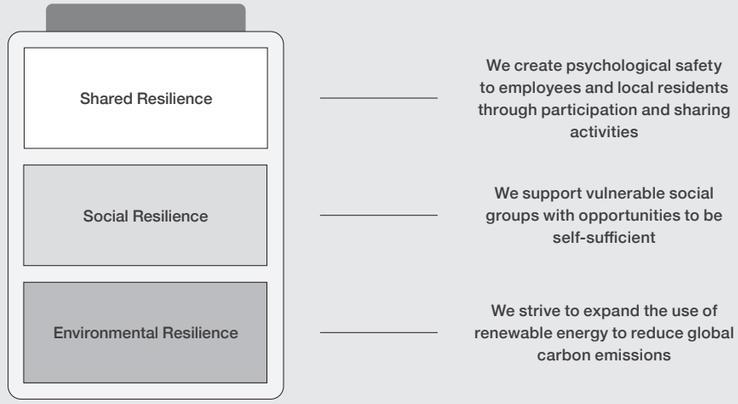
LG Energy Solution is leading the industry in terms of next-generation cell technology, and is developing all-solid-state battery cells with improved safety and lightweight lithium-sulfur battery cells with high energy density. All-solid-state battery cells are safety-reinforced batteries that replace the existing liquid-type electrolyte with solid electrolyte. We have been working on the commercialization of semi-solid-state batteries with increased safety that utilizes polymer materials in the lithium-ion battery manufacturing process. We are also in preparation for the production of all-solid-state battery cells with high energy density and improved safety through using sulfide-based materials.
Lithium-sulfur battery cells are next-generation cells with competitive edge in terms of energy density and price by using sulfur, a low-cost and lightweight material, as cathode. This technology is suitable to be used for flying objects where compactness is the key. In particular, in the case of vertical take-off and landing vehicles for urban air mobility, the output power characteristics of flying objects are also crucial since takeoff and landing demand a large amount of energy in an instant. In this regard, LG Energy Solution is developing lightweight lithium-sulfur battery cells that can deliver a high level of output power stably. We further aim at developing lithium-sulfur battery cells to be applied to Urban Air Mobility (UAM) and a High-Altitude Pseudo Satellite (HAPS)—unmanned aerial vehicle flying in the stratosphere—that can function as satellites.



A high-altitude pseudo satellite equipped with the lithium-sulfur battery

Corporate Social Responsibility

LG Energy Solution places a high value on corporate social responsibility (CSR) activities linked to ESG by coexisting with local communities and genuinely engaging with stakeholders on social and environmental issues. Like batteries that are charged to share energy, we set three CSR directions under the concept of “resilience” to aim at overcoming social limitations and restoring the environment through voluntary sharing. In this respect, we engage in several activities to improve the environment, provide opportunities for self-sufficiency, and nurture a culture of sharing.



Hope Green Power Plant

LG Energy Solution installed a 410-kW solar power generation facility at Cheongju Northern Transit Center. After 20 years of operation, it is expected to generate welfare funds of about KRW 800 million and reduce 4,900 tons (244 tons per year) of GHG emissions. All proceeds will be donated to welfare projects which support vulnerable people in Chungcheongbuk-do province.

Supplying Renewable Energy with ESS in Island Areas

312 kWh ESS was installed and associated with photovoltaic facilities in Deokjeok Elementary·Middle·High School. We plan to fund the school operation by spreading the use of renewable energy, enhancing electricity quality, and reducing energy expenses.

Activities to Support Talent in Science and Technology

We operate a range of programs for building scientific competencies, which serve as the fundamental of national power, by hosting automobile battery innovation contests for Chinese university students (China), providing scholarships for vocational schools and employment connection programs (China), co-hosting job-training courses including battery production with girl scouts (U.S.), and cultivating technicians and experts by funding the Customized Education Polymer Program (CEPP) with the Korea Advanced Institute of Science and Technology (Daejeon).

Teaching Scientific Technologies

LG Energy Solution provides opportunities for scientific thinking and learning the operating principles of EVs through offering science courses for kids and supplying science textbooks, video materials, and EV kits to elementary and middle schools in Gwacheon and Daejeon.

Donation of Books and Daily Necessities

Our social resilience support for the underprivileged community in Korea includes book donations (Ochang), financially supporting the vulnerable group in purchasing bikes (Ochang), replacement of old home appliances (Daejeon), and charitable donations to children of low-income families (Daejeon). We continue to support communities at home and abroad by donating supplies to welfare centers of overseas business sites (China), daily necessities and toys to low-income families on Thanksgiving Day and Christmas (U.S.), and school supplies to orphanages, as well as making charitable donations to vulnerable families (Poland).

An automobile battery innovation contest for university students in China

The opening ceremony of a supplementary class and delivery of scholarship funds at the Pu'er Vocational Training Center in China

ESG by Me

We asked Feixianzi Li of LG Energy Solution Nanjing (LGESNJ)

What CSR programs are operated in your area?

LGESNJ China strives to grow together with local communities and influence them more positively. In cooperation with local communities, we engage in a variety of activities, including COVID-19 response, education sponsorship, volunteer services, environment protection, and residential environment improvement. We have organized the battery innovation contest for Chinese university students for five years to support talented students. We seek cooperation with universities for battery technology development and sustainable development of the battery industry. We also carry out donation activities for the health and development of children and adolescents, as well as improve their learning environments. LGESNJ particularly organized after-school classes and operated educational and vocational programs for adolescents of low-income families. Furthermore, we organize, operate, and support activities to protect the environment, in which our employees participate by planting trees, saving energy, and taking low-carbon trips.

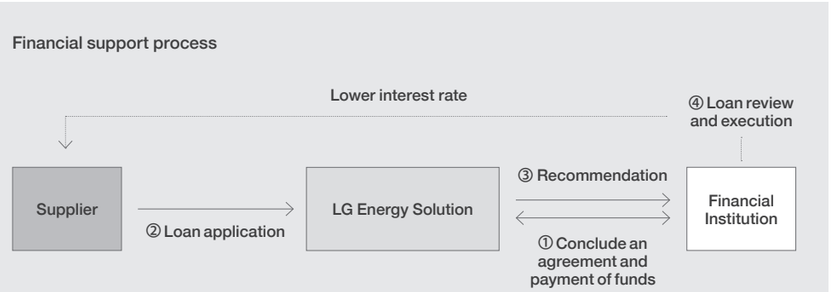
What is the most essential factor for the sustainable growth of a company?

The safety and growth of employees should be of utmost importance, and also it is required to expand local hiring for mutual growth with local communities. As a global leader in the battery industry, LG Energy Solution needs to further deepen its efforts to achieve sustainable growth through technological innovation, talent development, generation of added values for customers, and moving towards the carbon-neutral goal.

Shared Growth

LG Energy Solution puts forth more effort to establish a sustainable shared growth system by strengthening business ties and enhancing the competitiveness of business partners through various support programs. Since 2019, we have held the "Shared Growth Conference" at the beginning of each year to discuss management plans with suppliers, as well as purchasing policies and planning. In 2022, we built the Battery Cell/Pack Mutual Growth Team within the Purchasing Department and renamed the Shared Growth Conference as "Partners' Day", thus solidifying our position as a global battery leader through strengthened partnerships.
For efficient fund management of suppliers, LG Energy Solution operates a loan fund with preferential interest rates for suppliers based on the fund deposited in financial institutes. The "shared growth investment support fund(KRW 150 billion)", which is our loan fund with low interest rates, focuses on funding facility investments and operational expenses that can be of great burden to business partners. In order to provide sufficient support, we also significantly increased the loan limit.
In addition to financial support, we are actively carrying out activities to improve suppliers' competitiveness, such as improving the manufacturing process to help suppliers secure quality competitiveness and profitability, and strengthening their quality management systems. The biannual "Shared Growth Academy" supports the technological improvement of business partners as well as nurtures future leaders. In 2021, the academy offered over 20 courses for 53 domestic and overseas business partners. Moreover, through LG Academy, an educational institution designated by the Ministry of Employment and Labor, we provide free online courses in business, IT, language/culture, liberal arts, and leadership, for employees of suppliers. They have access to not only the mandatory legal education such as workplace sexual harassment prevention education but also a wide selection of up-to-date courses. We added an AI English language training in 2021 to support the capacity-building of employees of suppliers.

Financial support process



2022 LG Energy Solution Partners' Day

Global Initiative

To realize the value of building a sustainable battery supply chain, LG Energy Solution stays in constant communication with various stakeholders and expands its global network to strengthen partnerships. In particular, we actively engage in the process of developing global ESG standards by joining global initiatives related to our ESG management strategy and contributing to the development of local communities surrounding the battery supply chain.

Implementing the Carbon Neutral Roadmap Through RE100 and EV100

For the first time in the battery industry, LG Energy Solution joined RE100 and EV100 simultaneously in April 2021 and declared the goal of shifting to renewable electricity and Eco-friendly vehicles by 2030. According to RE100's annual disclosure report 2021 released by an international non-profit, the Climate Group, and Carbon Disclosure Project (CDP), our global business sites' conversion rate of renewable energy reached 33% in 2020, ranked first among 14 domestic companies that declared RE100. In addition, we became the first Korean company to be designated as a member of the Advisory Committee of the RE100 Project Board. As one of the committee members, we are acting as a policy advisor on devising major strategies, such as measures to encourage companies' participation in renewable energy and measures to procure renewable energy.

Strengthening ESG Risk Management within the Global Supply Chain through RBA, RMI, and RLI

LG Energy Solution is the first battery company in Korea to join the Responsible Business Alliance (RBA) in November 2021. As a member of the RBA, the global coalition that dedicates to sustainability in global supply chains, we prevent risks associated with labor, safety and health, environment, and business ethics, that may arise in the supply chain. We also carry out inspection and improvement activities for our domestic and overseas business site operations, as well as suppliers, in accordance with the RBA Code of Conduct. Additionally, we registered as a member of the Responsible Labor Initiative (RLI) and Responsible Minerals Initiative (RMI) under the RBA to strengthen our ESG management by incorporating global standards into our supply chain evaluation management. We intend to solidify our industry-leading position by strengthening internal and external cooperation on responsible mineral sourcing and ensuring corporate human rights encompassing diversity, equity, and inclusion

Supporting Artisanal and Small-Scale Mining Communities in the Democratic Republic of the Congo and Eradicating Forced Labor and Child Labor through FCA

The Fair Cobalt Alliance (FCA) is an organization founded in August 2020 to eradicate forced labor and child labor in cobalt mines in the Democratic Republic of the Congo. Over 20 international companies, including Tesla, Glencore, and Google, have joined this platform. Together with FCA, LG Energy Solution aims to promote community development activities and lead sustainable changes within the local community and economic system (the activities include conducting safety training for mine workers, providing solar panels to local schools, and supporting out-of-school children's access to education).

Establishing ESG Standards for the Battery Industry through GBA

LG Energy Solution monitors and preemptively responds to battery policies and regulations mainly in the EU by participating in the Global Battery Alliance (GBA), a battery supply chain consultative platform whose members mainly come from Europe. By joining GBA, we aim to construct a sustainable and responsible battery value chain by setting ESG-related standards, such as measuring carbon footprints, the environment, and human rights across the battery manufacturing supply chain.

Supporting the Ten Principles of the UNGC and Committing to ESG Management

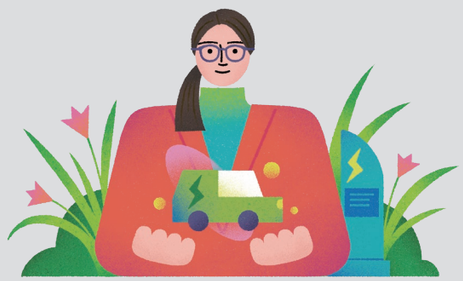
LG Energy Solution joined the UN Global Compact (UNGC) in May 2022, pledging to adhere to the ten principles of the UNGC in the areas of human rights, labor, environment, and anti-corruption in all business activities. In addition, we support the achievement of the United Nations Sustainable Development Goals (UN SDGs) in the three areas of social inclusion, economic growth, and sustainable environment. We plan to disclose the related activities and achievements.

The Ten Principles of the UNGC

Human Rights	1	Businesses should support and respect the protection of internationally proclaimed human rights; and
	2	make sure that they are not complicit in human rights abuses.
Labour	3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
	4	the elimination of all forms of forced and compulsory labour;
	5	the effective abolition of child labour; and
	6	the elimination of discrimination in respect of employment and occupation.
Environment	7	Businesses should support a precautionary approach to environmental challenges;
	8	undertake initiatives to promote greater environmental responsibility; and
	9	encourage the development and diffusion of environmentally friendly technologies.
Anti -corruption	10	Businesses should work against corruption in all its forms, including extortion and bribery.

ESG by Me

We asked Miyeon Yoon from the Advanced Tech & Testing Team of LG Energy Solution Europe GmbH (LGESEG)



How powerful are the EU battery regulation and ESG–related regulations?

The EU's commitment to ESG activities is very strong, and its importance is gradually increasing such as achieving carbon neutrality based on the European Green Deal, stabilizing the EU supply chain and responsible sourcing through the activation of the closed-loop, and the promotion of new and renewable energy for energy independence. Building a sustainable battery value chain is a key factor for achieving their commitment; hence, the EU is continuously developing various policies and supporting technological research projects. In particular, a new EU battery regulation is going to be announced at the end of 2022. It includes regulations on carbon footprint of battery products, the proportion of recycled materials used, and environmental and human rights supply chain due diligence. The requirements in the regulation across the entire battery supply chain, are to establish a sustainable battery ecosystem in Europe.

In what ESG activities are LGESEG engaged?

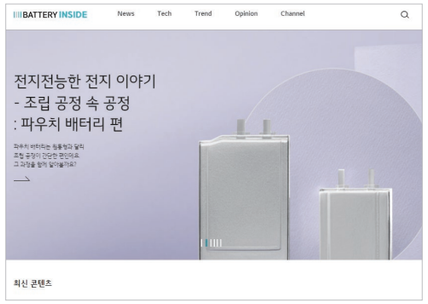
In order to preemptively respond to rapidly changing markets and regulatory requirements, we are actively interacting with related agencies and battery industries by seeking partners in recycling and battery passports businesses in EU, as well as monitoring EU policies and trends related to batteries, through our engagement in RECHARGE (the European battery industry association). Furthermore, as a member of EV100, we are converting LGESEG vehicles into electric ones, as well as installing and operating EV charging stations within our buildings.

Communication

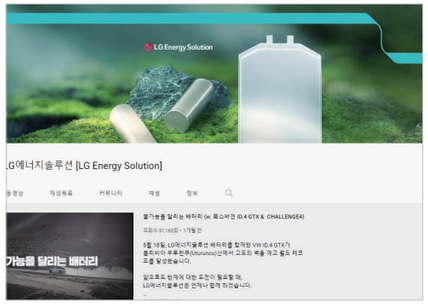
For more active communication with diverse stakeholders, including clients, LG Energy Solution operates various channels, such as the company website, blog (Battery Inside), and social media channels (Facebook, YouTube, LinkedIn). We also actively participate in domestic and international industrial fairs, conferences, and forums as an effort to communicate with more stakeholders through diverse channels.

Website	http://www.lgensol.com
Facebook	https://bit.ly/LGES_FB
YouTube	https://www.youtube.com/lgenergysolution
LinkedIn	https://www.linkedin.com/company/lg-energy-and-solution
NAVER Post	https://post.naver.com/lgensolpr
Battery Inside	http://inside.lgensol.com
Instagram	http://instagram.com/lgenergysolution

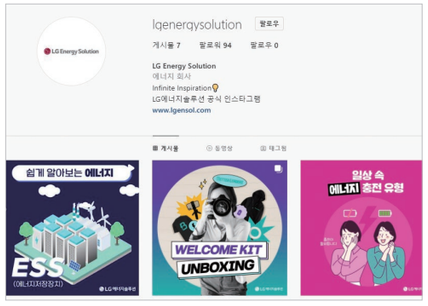
Website



Battery Inside

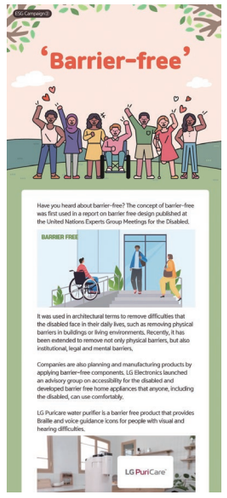


YouTube



Instagram

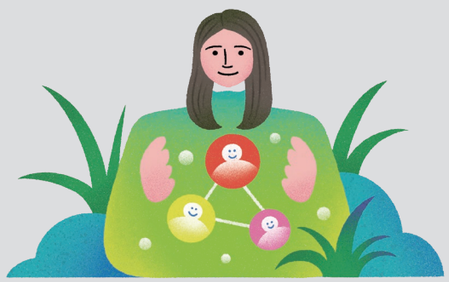
Interbattery 2022



Internal ESG communications

ESG by Me

We asked So-yeong Kim of the IR Communication Team



How strong are investor demands for ESG globally?

Recently, there are emerging global fund trends in ESG investment that take a company's non-financial factors (ESG) into consideration. ESG investing is not just about fulfilling corporate social responsibility and properly disclosing related information. There is a growing trend to actively intervene in companies' business activities, such as writing letters to shareholders or expressing opinions at the general meeting of shareholders. As LG Energy Solution is playing a vital role in EV production, it is naturally drawing attention from ESG investors. After the listing, the demand for IR meetings to discuss ESG issues continues to expand, and the demand for the disclosure of additional information is expected to increase as well.

What is the role of the IR Team?

Due to investors' interest in ESG, shareholders wish to communicate directly with the company, and discuss the progress of core tasks, going beyond merely reading and analyzing ESG reports. Furthermore, they assess various areas such as the management's philosophy to decide whether to invest in LG Energy Solution. The IR team conducts active external communication and assists shareholders in making investment decisions based on such market demands. We aim to contribute to enhancing the company's long-term value based on building investors' trust.

Appendix

Major Performance Index

Economy

Major indicator			Unit	2021	2020[01]	2019
Consolidated statements of income (loss)	Revenue		KRW million	17,851,906	1,461,068	
	Operating profit(loss)		KRW million	768,470	(475,206)	
	Profit (loss)		KRW million	929,868	(451,771)	
Sales by region	Republic of Korea[02]		KRW million	2,235,338	132,385	
	China		KRW million	2,910,541	148,980	
	Asia/Oceania		KRW million	1,110,368	108,620	
	US		KRW million	2,827,944	246,686	
	Europe		KRW million	8,767,715	824,397	
Income tax expense	Consolidated	Income tax	KRW million	521,797	11,174	
		Income tax expense (profit)	KRW million	76,523	(147,345)	
	Separate	Income tax	KRW million	140,849	54	
		Income tax expense (profit)	KRW million	(128,577)	(152,178)	
Business site with corruption risk[03]	Total number of business sites (A)		number	14		
	Business site with corruption risk evaluated	Number (B)	number	2		
		Proportion (B)/(A)	%	14		
Anti-corruption trained employee (by country)	Republic of Korea	Proportion	%	63	13	
	US	Proportion	%	0	0	
	Poland	Proportion	%	0	100	
	Germany	Proportion	%	0	100	
	Australia	Proportion	%	0	0	
	China	Proportion	%	16	47	
Confirmed corruption cases and measures	Number of confirmed corruption cases		cases	3	5	
	Number of sanction cases		cases	3	7	
	Number of contracts with suppliers terminated due to breach of corruption		cases	1	0	
	Cases where the contracts with suppliers were not renewed due to corruption		cases	0	0	
Unfair transaction	Litigation	In progress	cases	0	0	
		Completed	cases	0	0	

[01] Indicate December 2020 (1 month) only
[02] Domestic sales include exports under local LC conditions.
[03] Due to the change in the anti-corruption-related diagnostic standards and implementation method, which were carried out for LG Chem in 2020, a new corruption risk assessment for LG Energy Solution began in 2021

Environment

Major indicator			Unit	2021	2020	2019
Energy/ Greenhouse gases	Energy consumption	Total energy consumed	TJ	19,582	16,427	12,150
		Direct energy consumed	TJ	5,236	4,024	2,625
		Indirect energy consumed	TJ	14,346	12,403	9,525
		Usage of renewable energy	TJ	4,536	2,454	802
	GHG emissions	Total GHG emissions (Scope 1&2)	ton CO_{2eq}	1,347,068	1,221,921	962,792
		Scope 1(direct)	ton CO_{2eq}	269,110	206,056	132,169
		Scope 2(indirect)	ton CO_{2eq}	1,077,958	1,015,865	830,623
Water resources management	Water	Total water withdrawal	ton	8,795,783	6,237,220	
	Wastewater	Volume of treated water	ton	3,264,536	3,912,558	
		Volume of recycled water	ton	-	-	
Waste management	Waste generation	General waste	ton	93,183	111,946	
		- Recycled	ton	82,412	82,731	
		- Incinerated	ton	9,284	19,342	
		- Landfilled	ton	49	5,603	
		- Others	ton	1,437	4,270	
		Designated waste	ton	50,708	41,486	
		- Recycled	ton	38,760	15,291	
		- Incinerated	ton	11,614	24,157	
		- Landfilled	ton	-	-	
		- Others	ton	334	2,038	
		Total waste	ton	143,891	153,432	
Air pollutants	Air pollutant emissions	NOx	kg	98,368	59,737	
		SOx	kg	8,582	3,549	
		Volatile organic compounds (VOCs)	kg	97,802	35,369	
		Hazardous air pollutants (HAPs)	kg	1,393	2,973	
		Particulate matter (PM)	kg	11,084	4,974	
		Other atmospheric emissions	kg	12,977	7,562	
Business environment management	Environmental management system (ISO 14001)	Number of certified business sites	number	7	5	
		Number of business sites to be certified	number	7	7	
		Adoption rate	%	100	71	
	Environmental laws and regulations	Investment for environmental safety	KRW 100 million	325		
		Non-compliance with environmental laws and regulations	cases	0	1	

Society

Major indicator			Unit	2021	2020	2019
Personnel indicator	Employees	Total number of employees	persons	26,891	23,344	19,986
		Korea	persons	9,566	7,502	6,571
		Overseas	persons	17,325	15,842	13,415
	Gender (Korea)	male	persons	8,095	6,394	5,683
		Female	persons	1,471	1,132	903
	Gender (overseas)	male	persons	11,504	6,586	6,876
		Female	persons	5,821	2,630	2,887
	Executive officer (Korea)	male	persons	77	62	44
		Female	persons	2	1	-
	Managerial position (Korea), (management personnel or higher)	male	persons	3,433	2,428	1,915
		Female	persons	494	374	252
	By contract (Korea)	Permanent	persons	9,475	7,445	6,515
		Non-permanent	persons	91	81	71
	By rank (Korea)	Associate (associate and specialist)	persons	5,639	4,724	4,419
		Management personnel (professional or higher)	persons	3,848	2,739	2,123
		Executive	persons	79	63	44
	By age (Korea)	Under 30	persons	2,215	1,787	1,883
		30-50	persons	6,833	5,357	4,449
		50 and above	persons	518	382	254
	Number of employees by country	Republic of Korea	persons	9,566	7,502	6,571
		China	persons	10,780	10,172	9,163
		Poland	persons	4,847	4,177	2,866
		US	persons	1,562	1,349	1,246
		Germany	persons	74	85	74
		Taiwan	persons	42	42	46
		Australia	persons	8	9	10
		Others	persons	12	8	10
	Retirement rate of employees by country	Republic of Korea	%	1.7	1.9	2.6
		China	%	24	24	32
		Poland	%	25	33	39
		US	%	32	45	40
		Germany	%	9	4	10
		Taiwan	%	2	8	5
		Australia	%	0	29	11
		Others	%	0	0	0
DEI (Korea)	Ratio of total female employees	Ratio of total female employees	%	15.4	15.0	13.7
		Management (executive officers and directors)	%	2.5	1.6	0.0
		Management personnel (professional or higher)	%	12.6	13.3	11.6
		Associate (associate and specialist)	%	17.3	16.0	15.4
	Inclusiveness[04]	Number of employees with disabilities	persons	205	31	-
		Employment rate of persons with disabilities	%	2.2	0.4	-
	Parental leave	Number of employees on parental leave (total)	persons	163	211	146
		Number of female employees on parental leave	persons	59	123	76
		Ratio of employees who have returned after parental leave	%	100	100	100
		Number of male employees on parental leave	persons	104	88	70
		Ratio of employees who have returned after parental leave	%	100	100	100
	Employee training	Training hours per person	hour	138		
		Training cost per person	KRW	1,007,715		
Safety	Safety and health management system (ISO 45001)	Number of certified business sites	companies	6	6	
		Number of business sites to be certified	companies	8	8	
		Adoption rate	%	75	75	
	Injuries arising out of duty (employee)	Deceased employees	persons	0	1	1
		Injuries sustained by employees	cases	30	22	17
		LTIR[05](rate)	Cases per 200,000 hours	0.09	0.08	0.06
	arising out of duty (supplier)	Deceased employees of suppliers	persons	0	0	0
		Injuries sustained by suppliers	cases	14	10	3
		LTIR[05](rate)	Cases per 200,000 hours	0.12	0.09	0.02
	Disease arising out of duty (employee)	Deceased employees	persons	0	0	0
		Diseases sustained by employees	cases	0	0	0
		OIFR[06](rate)	Cases per 200,000 hours	0	0	0
	Disease arising out of duty (supplier)	Deceased employees of suppliers	persons	0	0	0
		Disease sustained by suppliers	cases	0	0	0
		OIFR[06](rate)	Cases per 200,000 hours	0	0	0

[04] Based on the government's reporting standards
[05] Lost-Time Injuries Rate (LTIR) = (Number of lost time injuries)/(Number of lost time injuries) X 200,000
[06] Occupational illness frequency rate (OIFR) = (Number of occupational diseases)/(total working hours) X 200,000

Governance

Major indicator			Unit	2021	2020	2019
BoD	Composition of BoD	Total	persons	7		
		Number of inside directors	persons	2		
		Number of outside directors	persons	4		
		Number of non-standing directors	persons	1		
		Number of female directors	persons	2		
	Operation of BoD	Number of meetings	sessions	19		
		Average attendance rate	%	100		
		Average tenure of directors	months	7		
	ESG Committee	Number of meetings	sessions	1		
Remuneration (Korea)	Remuneration[07]	Total annual remuneration to highest-paid personnel in organization(A)	KRW million	2,020	78	
		Median of total annual remuneration of all employees(B)	KRW million	82.9	9.6	
		A/B		24.4	8.1	
Collective agreement (Korea)	Labor union membership	Total personnel	persons	2,059	2,098	1,979
		Total applicable personnel	persons	3,960	3,422	3,361
		Proportion	%	52.0	61.3	58.9
Collective agreement (China)	Labor union membership	Total personnel	persons	14,116	9,688	8,787
		Total applicable personnel	persons	14,342	10,025	9,306
		Proportion	%	98.4	96.6	94.4

[07] Data for 2020 is based on labor expenses in December (Based on business report of LG Energy Solution)
* As for LG Energy Solution, the majority of the BoD was composed of outside directors (four out of seven); however, Director Dukgeun Ahn resigned for personal reasons on May 10, 2022. Therefore, as of the report submission date, the BoD consists of two inside directors, one non-standing director, and three outside directors. One new outside director will be appointed in line with the procedure set out under the law.

Stakeholder Engagement

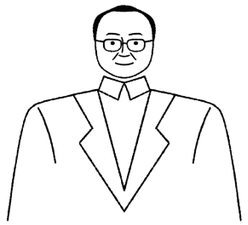
Definition and Identification of Stakeholders
LG Energy Solution defines all organizations and individuals that exchange impact on the company's business activities as stakeholders, and classifies them into eight categories.

Communication Channel and Expectations of Stakeholders
Stakeholder communication is essential for practicing ESG management. LG Energy Solution communicates with stakeholders in the following manner.

Stakeholder Group	Expectation	Communication method
Shareholder / investor	Long-term growth	Publishing ESG report
	Transparent disclosure of information	Financial information disclosure
Customers	Open communication	Collecting customer feedback
	Climate Action	CDP report
	Business innovation and R&D	Business report
Employees	Human resources capital management	Employee Satisfaction Survey
	Cooperative labor-management relationship	Labor-Management Committee
	Promoting employee benefits	Employee Committee
	Reinforcing employee safety and health	Safety and Environment Committee
Supplier	Establishing strategic/cooperative partnership	Supplier presentations
	Management support and education	Sharing managerial / technical support programs
Community / NGO	Setting up social commitment strategy	Listening to opinions such as survey
	Social contribution	Socially contributed activities
Academia / experts	Industry-academic cooperation	Joint R&D
Industrial associations	Responding to new regulations	Industry and business-related associations
Government agencies	Fair trade and compliance	Advice on industrial policies
	Shared growth	Government pilot projects

Opinions of Stakeholders

Dongwoon Noh, professor at Hanyang University



Among the various aspects of ESG management, please share us your opinion on which aspect LG Energy Solution should focus on the most.

Among the ESG aspects, I should say that climate change and supply chain issues are the most critical. In relation to supply chain issues, I believe that ensuring a stable supply chain of mineral resources needed for battery production and products that use batteries (e.g. EVs) will have a direct impact on corporate activities. Since the competition is expected to grow fierce to obtain the resources necessary for carbon neutrality, securing a stable supply chain will be an urgent task.
Carbon neutrality now serves as an agenda with a direct impact on business activities. Corporate activities aimed at reducing GHG emissions will not only serve as the standards for financing, but also as a factor interfering with international trade as seen in the Carbon Border Adjustment Mechanism (CBAM). Since we expect that data on the products' carbon footprint will be verified, it is necessary to make an effort to achieve carbon neutrality in terms of the value chain.

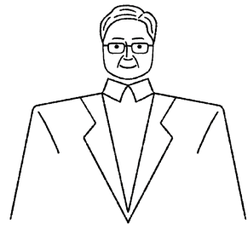
LG Energy Solution plans to achieve RE100 in 2030, carbon neutrality by 2040, carbon neutrality including supply chain by 2050, and carbon-negative after 2050 through the conversion into renewable energy, improvement in energy efficiency, fuel conversion, and external carbon offset projects. As for domestic companies, it is not easy to reduce GHG emissions in the long term due to the high price of renewable energy, institutional challenges, and limitations in improving energy efficiency. If there are important issues to be considered for a company's carbon-neutrality portfolio, please give us your insight.

It is necessary to identify all means necessary for reducing GHG emissions in the workplace and to use them to come up with the marginal cost curve for reducing GHG emissions. For costly reduction measures, it is reasonable to structure a portfolio by adjusting the schedule, among others.
It is also logical to consider proposing the government to install new and renewable energy equipment, purchase RECs, to introduce the RE100 certification scheme, and to purchase certifications. Utilizing green hydrogen fuel cells is also an option, but there is not sufficient infrastructure yet. In addition, we could offset carbon emissions by using hydrogen vehicles as business vehicles.
It would be desirable to rely on the reduction results of the international voluntary carbon market as a last resort. As for our 2040 plan, we could purchase GHG reduction performance in the international voluntary carbon market to achieve carbon neutrality in business sites through Internationally Transferred Mitigation Outcomes (ITMO).

Could you please explain the special preparations needed for LG Energy Solution?

I anticipate that achieving carbon neutrality and securing a supply chain of raw materials needed for battery production to be significant issues. Along with the diversification of raw material sources, it will be necessary to develop alternative raw materials. Finding alternatives will be crucial since relying solely on China's monopoly supply carries risks.
Even if achieving carbon neutrality comes at a high expense, it is important to practice carbon neutrality in the workplace. Since the power used in electric vehicles must be generated from a carbon-free source to be evaluated as contributing to the achievement of carbon neutrality by batteries (vehicles), it would make sense to practice directly at LG Energy Solutions' site.

Youngjae Ryu, CEO of Sustinvest



Among the various aspects of ESG management, what do you think comes first for companies?

ESG issues that are significant to domestic manufacturers include climate action, employee diversity and human right management. First, in relation to climate action, carbon reduction in the product life cycle is not simply an environmental aspect; it is rather rising as a significant variable that may affect the company's future cash flow and ultimately sway the destiny of corporate values. This is because more investors are using carbon intensity as a standard for investment decisions designed to measure a company's degree of energy efficiency and management efficiency.
Second, employee diversity and rights also refer to fostering a workplace culture that respects diversity and opposes discrimination based on race, gender, academic attainment, nationality, culture, religion, generation, or sexual orientation. In order to attract talented people and improve organizational performance and efficiency, these issues must be dealt with in a long-term perspective.

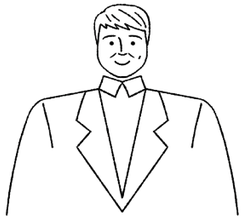
Recently, more diverse ESG assessments have been conducted. What are some measures to make the most of them?

Recently, the issue of varied assessment results between rating agencies for the same company has been raised. However, the correlation coefficient is anticipated to increase in the future as a result of (i) securing reliable ESG data disclosed in line with standardized information disclosure guidelines driven by the International Sustainability Standards Board (ISSB), and (ii) improving the evaluation framework and evaluation methodologies (e.g. scoring method) and disclosing in a more transparent manner. Given the specificity of ESG evaluation, I do not think the level of ESG evaluation will increase to the level of traditional credit evaluation based on financial data. Traditional ESG evaluations have been conducted by collecting and evaluating a company's past ESG data, but they have certain limitations in attracting investors who are interested in the company's changes in future value. To solve this issue, the current rating agencies have developed a method of granting grades by crawling the current ESG information and data in real-time based on big data analysis and began to provide it to investors. Whereas traditional ESG evaluation took relatively less account of the distinct characteristics and materiality of each sector, the current approach identifies material issues for each sector and reflects them in the evaluation as significant factors. In addition, as more investments are made in passive funds and stewardship (trustee's responsibilities in principle), investors are becoming more active as shareholders, and, as a result, they prioritize the unique and significant issues in each sector and company.
Just as the human body can be treated and prescribed on the premise of diagnosis, an objective external evaluation may carry the same meaning for a company as a medical examination of the human body. Therefore, the results of rating agencies or peer review help identify a company's strengths and weaknesses as well as risk factors compared to competitors. They also enable a company to benchmark the ESG management of its competitors and make improvements. ESG evaluation also allows the company to reduce the cost of capital when financing its business. As global credit rating agencies like S&P and Moody's incorporate ESG factors into their credit ratings, excellent ESG performance affects credit ratings. This reduces the interest rate when issuing corporate bonds, thus lowering the company's cost of capital.

Please give us a piece of advice on LG Energy Solution's leadership in ESG management.

ESG management should be promoted and evaluated from a long-term perspective. From a short-term perspective, ESG management must consistently persuade controlling shareholders and external investors that the return period for that investment is bound to be long-term, as it can lower a company's financial performance by increasing the capital expenditure (CAPEX) or operating expenses (OPEX). That is why it is necessary to persuade dominant stockholders and external investors that it would take time before they see a return on their investment. In addition, to internalize ESG management, it is essential to reset the "fundamental objectives of the company" and declare changes equivalent to the degree of a re-launch both internally and externally. The objective of a company that truly seeks to pursue ESG management should be to provide "profitable solutions" rather than to generate profits by causing problems for people and the environment.

Sang Soo Lee,
professor at Yonsei University



Among the widely varying areas of ESG management, including climate action, supply chain issues, circular economy, and governance, what do you think matters the most to companies?

Concerns over “greenwashing” exist in regard to “ESG management,” which has recently been a burning issue. Greenwashing arises from the absence of key performance indicators (KPIs) that are designed to legitimately evaluate a company's ESG management. We are now in the period when a company's value, which had been assessed only based on financial factors, has to gradually consider non-financial factors as well. Companies now require formulating mid- to long-term strategies for sustainability to satisfy objective indicators for ESG evaluation. Korea Exchange (KRX) also focuses on developing and managing KPIs on account of the K-ESG guidelines based on future market trends and statistics to use them for evaluating corporations.

In addition, we need to devise an ESG promotion plan that takes into account biodiversity-related challenges that are still somewhat unfamiliar to domestic companies. In its Global Risk Report 2020, the World Economic Forum listed “biodiversity loss” and “ecosystem collapse” as two of the greatest threats humanity will face in the next 10 years. The “Taskforce on Nature-related Financial Disclosures (TNFD)” was launched in 2020 in response to the critical mind that the loss of nature may increase financial risk. The initiative develops reporting standards to overcome biodiversity risks by 2023. While the “Task Force on Climate-Related Financial Disclosures (TCFD)” has the same objective to standardize the public disclosure of ESG data by global companies, the TNFD aims to analyze corporate risks and opportunities in a broader sense. Currently, around 420 major global companies, institutions, and countries participate in the TNFD. Although joining the initiative offers no immediate benefits to corporations, they would be able to form an ESG framework with a competitive advantage that enables natural capital-related companies to develop mid- to long-term strategies and manage their governance, capital allocation, and risks.

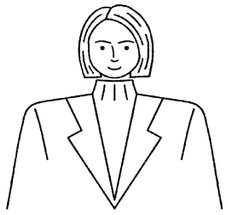
What would be the critical ESG issues in the future, and what does LG Energy Solution need to prepare?

I would like to suggest two things from an ESG management perspective.

The first is to attain a leading position as a leader in the reuse and recycling of end-of-life batteries and to grasp the relevant R&D foundation. From the view of risk management designed to deal with biodiversity decline along with climate change, it is necessary to preemptively deal with the efficient recovery of scarce resources contained in end-of-life batteries, such as lithium and cobalt, and recycling regulations for these batteries that is expected be reinforced in the near future.

The second is to upgrade LG Energy Solution's stance through ESG management initiatives. ESG management is a critical element, not an option, to ensure the survival of a company. This is why it matters to develop and promote the global strategy of LG Energy Solution, which pursues a sustainable environment and society based on ethical corporate governance.

Eva Eunkyung Lee,
chief researcher at the UNGC



What challenges should LG Energy Solution focus on in each ESG field?

In terms of environment (E), the challenges associated with realizing a low-carbon economy to combat climate change, participating in the net-zero (zero net carbon emissions), and increased use of renewable energy to achieve these goals would matter the most to the government and companies. In particular, we must focus on “responsible management of supply chain” to reduce risks and prevent “ESG washing,” in addition to building a stable supply chain of raw materials.

In the social (S) area, it is necessary to formulate human rights policies and enhance due diligence in light of major internal and external stakeholders. In addition, we must nurture an environment that enables employees of various backgrounds to exhibit enhanced competency within a flexible organizational culture, including cultivating female talents and increasing the ratio of female executives. We should also develop a strategy designed to continuously integrate ESG in terms of human resources management. Furthermore, the roles of leaders will continue to grow important when dealing with occupational safety and health issues, and they require the highest priority for management.

Governance (G) is closely related to transparent decision-making within the organization and the establishment of governance to internalize ESG, corporate anti-corruption ethical management, and establishment of a compliance system. The US and Europe, primarily, strongly enforce laws on corporate corruption, and the requirement for immunity is to prove that a company implements an effective anti-corruption program. It is most crucial to communicate in a transparent manner with stakeholders while continuously improving minority shareholder protection and shareholder return policies.

What are the human rights-related issues that companies should take note, and how should companies view and deal with them?

Since the adoption of the United Nations Guiding Principles on Business and Human Rights (UNGPs) in 2011, compulsory due diligence on human rights in the supply chain has already been enforced or will be enforced, primarily in the EU. Accordingly, demands and risks are rising from companies in relation to human rights, including developing human rights and labor policies by companies, reinforcing due diligence on human rights in line with the international organizations' recommendations, as well as managing supply chain issues and relief mechanisms.

Furthermore, while enhancing gender capacity, we should identify minorities and vulnerable groups, and develop policies designed to respect human rights and relief channels. In the era of digital transformation, it is also essential to consider fostering an organizational culture designed to improve flexibility and efficiency using various technologies, such as AI and metaverse.

In addition, as the diversity and importance of the workforce in the science/technology/engineering/mathematics (STEM) fields continue to increase, LG Energy Solution needs to establish and implement governance and goals designed to promote DEI (diversity, equity, and inclusion) in the mid- to long-term, thereby contributing towards achieving the SDGs and national goals throughout the world in Industry 4.0.

LG Energy Solution joined the UNGC in 2022 to contribute towards addressing various social issues. Would you like to add anything else for us to lead the way for ESG management?

I believe that LG Energy Solution has continued to pave the way for various sustainable initiatives, as well as developed and implemented various policies encompassing all ESG aspects to lead an accountable business. By joining the UNGC, LG Energy Solution will need to fully engage in the activities of various fields, such as human rights, labor, gender, and finance, as well as the SGDs, in addition to the environment, so as to enhance its associated capacity and further upgrade its ESG management.

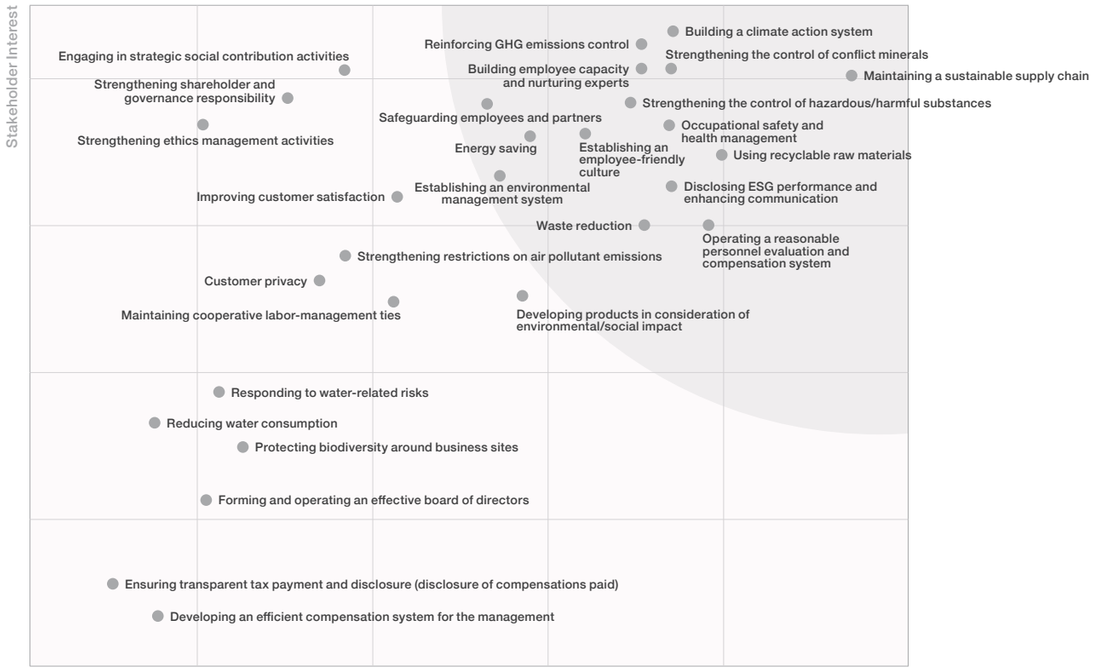
Materiality Assessment

Materiality Assessment Process

LG Energy Solution analyzed all aspects of industrial environments and global ESG initiatives, gathered opinions from internal and external stakeholders to draw out ESG focus areas and key tasks, and identified material issues through global ESG disclosure standards and indicator analysis of ESG rating providers.

Identification	Prioritization	Validation
• Global ESG disclosure/ evaluation initiative analysis - Identification of major items in GRI/MSCI/CSA/CGS • Review of material issue pool of major enterprises for benchmarking • Deriving a final pool comprised of 29 material issues	• Materiality assessment of the selected 29 issues • Survey of ESG-related departments and external stakeholders of LG Energy Solution • Prioritization of material issues by analyzing the impact on the business and stakeholders	• Review of material issue data of LG Energy Solution's dedicated ESG organization • Incorporation of external stakeholders' feedback

Materiality Assessment Results



Status of Reflecting the Materiality Assessment Results

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03 ESG Impact	ESG Strategy Q&A with CRO	Disclosure of ESG performance and strengthening communication	p.25-26 p.72-75
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		Reinforcing the control designed to reduce GHG emissions	
		Energy saving	
	Perfect Closed Loop	Using renewable raw materials	p.36-39
		Reducing waste generation	
	Supply Chain Sustainability	Managing a sustainable supply chain	p.42-43
		Strengthening conflict minerals management	p.44-45
	Diversity, Equity, Inclusion	Safeguarding employees and partners	p.52-53
		Maintaining cooperative company-union ties	
		Establishing an employee-friendly culture	p.49-51
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		Operating a reasonable personnel evaluation and compensation scheme	
04 ESG Inside	Governance	Forming and operating an effective board of directors	p.59-60
		Developing an efficient compensation scheme by the management	
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	Environment, Health&Safety (EH&S)	Establishing an environmental management system	p.61-63
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	Jeong-Do Management	Strengthening business ethics management activities	p.66
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GRI Index

Universal Standards (GRI 100)

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	102-2	Activities, brands, products, and services	p.12
	102-3	Location of headquarters	p.8
	102-4	Location of operations	p.10-11
	102-5	Ownership and legal form	Business report p.1-5
	102-6	Markets served	p.10-11
	102-7	Scale of the organization	p.10-11
	102-8	Information on employees and other workers	p.80-81
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	102-10	Significant changes to the organization and its supply chain	p.42-45
	102-11	Precautionary Principle or approach	p.56-57
	102-12	External initiatives	p.72
	102-13	Membership of associations	p.98
Strategy	102-14	Statement from senior decision-maker	p.17
	102-15	Key impacts, risks, and opportunities	p.25-27
Ethics and integrity	102-16	Values, principles, standards, and norms of behavior	p.64
	102-17	Mechanisms for advice and concerns about ethics	p.64
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	102-19	Delegating authority for economic, environmental, and social topics	p.59-60
	102-20	Executive-level responsibility for economic, environmental, and social topics	p.59-60
	102-21	Consulting stakeholders on economic, environmental, and social topics	p.83
	102-22	Composition of the highest governance body and its committees	p.59-60
	102-23	Chair of the highest governance body	p.59-60
	102-24	Nominating and selecting the highest governance body	p.59-60
	102-25	Avoiding conflicts of interests	p.59-60
	102-26	Role of highest governance body in setting purpose, values, and strategy	p.59-60
	102-27	Enhancing the highest governance body's collective knowledge	p.59-60
	102-28	Evaluating the highest governance body's performance	p.59-60
	102-29	Identifying and managing highest governance body's economic, environmental, and social impacts	p.59-60
	102-30	Effectiveness of risk management process	p.56-58
	102-31	Review of economic, environmental, and social topics	p.25-27
	102-32	Highest governance body's role in sustainability reporting	p.25-27
	102-33	Process for communicating critical concerns to the highest governance body	p.25-27
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Governance	102-35	Remuneration policies	p.59-60
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	102-37	Stakeholders' involvement in remuneration	p.59-60
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Stakeholder engagement	102-40	List of stakeholder groups	p.83
	102-41	Collective bargaining agreements	p.82
	102-42	Identifying and selecting stakeholders	p.83
	102-43	Approach to stakeholder engagement	p.83
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Reporting practice	102-45	Entities included in the consolidated financial statements	p.13
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	103-2	The management approach and its components	p.17
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Topic-specific Standards

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	205-3	Confirmed incidents of corruption and actions taken	p.78
Anti-competitive behavior	206-1	Legal actions for anti-competitive behavior and violations of anti-trust and monopoly legislation, and main outcomes of completed legal actions	p.78

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	302-2	Energy consumption outside of the organization	p.79
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	302-4	Reduction of energy consumption	p.30-33
	302-5	Reductions in energy requirements of products and services	p.36-39
Emissions	305-1	Direct (Scope 1) GHG emissions	p.79
	305-2	Indirect (Scope 2) GHG emissions	p.79
	305-4	GHG emissions intensity	p.79
	305-5	Reduction of GHG emissions	p.30-33
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	p.79
Waste	306-3	Waste generated	p.79
	306-5	Waste directed to disposal	p.79
Supplier environmental assessment	308-2	Negative environmental impacts in the supply chain and actions taken	p.42-45

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Topic	Index	Description	Page
Employment	401-3	Parental leave	p.81
Occupational health and safety	403-1	Occupational health and safety management system	p.61-63
	403-2	Processes used to identify work-related hazards, assess risks, and investigate work-related incidents	p.61-63
	403-3	Occupational health services (identifying and eliminating risks, and how the organization ensures the quality of these services)	p.61-63
	403-4	Worker participation and communication in terms of occupational health and safety	p.61-63
	403-5	Worker training on occupational health and safety	p.61-63
	403-6	Promotion of worker health (medical and healthcare services)	p.61-63
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	p.61-63
	403-8	Workers covered by an occupational health and safety management system	p.81
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	403-10	The number and rate of work-related ill health among employees and workers	p.81
Training and education	404-1	Employee education and training hours	p.81
	404-2	Type and scope of programs, and transition assistance programs	p.48-49
	404-3	Performance evaluation of employees and career development reviews	p.48-49
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Child labor	408-1	Measures taken to abolish child labor	p.52-53
Forced or compulsory labor	409-1	Measures taken to eliminate forced or compulsory labor	p.52-53
Human rights assessment	412-1	Total number and percentage of operations that have been subject to human rights impact assessments	p.52-53
	412-2	Percentage of employees trained in human rights policies or procedures	p.52-53
	412-3	Total number of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	p.52-53
Supplier social assessment	414-1	Number of new suppliers that were screened using social criteria	p.42-43
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TCFD Index

Pillar	TCFD Recommended disclosures	Page
Governance	a) Explanation on BoD activities regarding climate change-related risks and opportunities	p.25-26
	b) Explanation on management's role in assessing and managing climate change-related risks and opportunities	p.25-26
Strategy	a) Explanation on climate change-related risks and opportunities in the short, medium, and long term	p.30-33
	b) Explanation of the impact of climate change-related risks and opportunities on the organization's businesses, strategy, and financial planning	p.30-33
	c) Explanation of the organization's strategy, taking into consideration different climate change-related scenarios, including a 2°C or lower scenario	p.30-33
Risk Management	a) Explanation of the organization's processes for identifying and assessing climate change-related risks	p.30-33
	b) Explanation of the organization's processes for managing climate change-related risks	p.30-33
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	p.30-33
Metrics and Targets	a) Disclose the metrics used by the organization to assess climaterelated risks and opportunities in line with its strategy and risk management process	p.30-33
	b) Disclosure of Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions	p.79
	c) Explanation of the targets used by the organization to manage climate change-related risks and opportunities and performance against targets	p.30-33

VRF SASB Index

SASB Topic	Code	Category	Description	LG Energy Solution's Actions (Page and answer)
Energy Management	RR-FC-130a.1	Quanti-tative	(1) Total energy consumption	p.79
			(2) Ratio of grid power	p.79
			(3) Ratio of renewable energy	p.79
Health and Safety of Employees	RR-FC-320a.1	Quanti-tative	(1) Total recordable incident rate including incidents with no loss time	p.81
		Quanti-tative	(2) Total recordable death rate including incidents with no loss time	p.81
	RR-FC-320a.2	Discuss-ion and Analysis	Chronic health hazard in employees and contract workers	1. Carrying out health checkups for (permanent) employees once a year, and keep monitoring those with conditions (grades C and D) 2. Implementing health promotion activities for reduction; employees (contract workers) are assigned after general health checkups; in-house outsourcers (subcontractors) are subject to occupational environment inspection only
Product Efficiency	RR-FC-410a.1	Quanti-tative	Average storage capacity of batteries, by product application and technology type	Based on cylindrical 21700 (for electric operation): 270Wh/kg
	RR-FC-410a.2	Quanti-tative	Average energy efficiency of fuel cells as (1)electrical efficiency and (2) thermal efficiency, by product application and technology type	-
	RR-FC-410a.3	Quanti-tative	Average battery efficiency as coulombic efficiency, by product application and technology type	Based on cylindrical 21700 (for electric operation): 99% or more
	RR-FC-410a.4	Quanti-tative	Average operating lifetime of full cells, by product application and technology type	-
	RR-FC-410a.5	Quanti-tative	Average operating lifetime of batteries, by product application and technology type	Based on cylindrical 21700 (for electric operation): With 80% lifespan, 1,000 uses
Product End-of-life Management	RR-FC-410b.1	Quanti-tative	Percentage of products sold that are recyclable or reusable	100%
	RR-FC-410b.2	Quanti-tative	Weight of end-of-life material recovered, percentage recycled	Currently not responsible for recovering used batteries
	RR-FC-410b.3	Discuss-ion and Analysis	Description of approach to manage use, reclamation, and disposal of hazardous materials	p.62-63
Materials Sourcing	RR-FC-440a.1	Quanti-tative	Description of the management of risks associated with the use of critical raw materials	p.44-45
Activity Metric	RR-FC-000.A	Quanti-tative	Total number of batteries sold	2,226,265,434EA*
	RR-FC-000.C	Quanti-tative	Total energy production capacity of batteries sold	64,239MWh**

* Based on physical form of sales (simple summation of cells and packs) / **Excluding mobility and IT batteries

UN SDGs Linked Activities

To fulfill social responsibility as a global citizen, LG Energy Solution works hard to contribute to achieving UN SDGs goals. We are conducting various sustainability management activities regarding 12 sustainability development goals that have high relevance by considering the direct and indirect impact on LG Energy Solution's entire value chain.

UN SDGs	Detailed Activities	Page
1 NO POVERTY	Activities designed to support local communities, such as the welfare fund for the underprivileged, donation of books and daily necessities	p.69-70
3 GOOD HEALTH AND WELL-BEING	Youth health & education projects and environment protection activities Improving the environment of communal homes for children	p.69-70
4 QUALITY EDUCATION	Operating programs designed to nurture science and technology talent	p.69
5 GENDER EQUALITY	Managing an organizational culture and female talent management based on gender equality	p.48
7 AFFORDABLE AND CLEAN ENERGY	Implementing a project designed to distribute renewable energy linked to ESS in remote regions / Operating Hope Green Power Plant	p.69
8 DECENT WORK AND ECONOMIC GROWTH	Operating "Areum Nuri" to create jobs for persons with disabilities Supporting mutual growth with partners	p.48 p.71
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Conducting research to develop new technologies/products for future growth such as next-generation batteries	p.67-68
10 REDUCED INEQUALITIES	Organizational culture based on diversity, equity, and inclusion (DEI)	p.48
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Promoting zero landfill to minimize environmental impact Utilizing renewable energy during battery production	p.39 p.45
13 CLIMATE ACTION	Developing goals to reduce GHG emissions Building a decision-making system for climate change Building/operating a global energy management system	p.30-33
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Conducting compliance education for employees Obtaining the ISO 37301 (compliance management system) certification	p.64
17 PARTNERSHIPS FOR THE GOALS	Joining RMI, RE100, EV100 initiatives	p.72-73

Independent Assurance Statement

To readers of LG Energy Solution 2021 ESG Report

Introduction

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

Scope and Standards

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

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

- GRI Sustainability Reporting Standards
- Universal standards
- Topic specific standards
- Management approach of Topic Specific Standards
- GRI 301: Materials
- GRI 302: Energy
- GRI 303: Water and Effluents
- GRI 305: Emissions
- GRI 306: Effluents and Waste
- GRI 308: Supplier Environmental Assessment
- GRI 403: Occupational Health and Safety
- GRI 404: Training and Education
- GRI 405: Diversity and Equal Opportunity
- GRI 406: Non-Discrimination
- GRI 412: Human Rights Assessment
- GRI 414: Supplier Social Assessment
- GRI 418: Customer Privacy

As for the reporting boundary, the engagement excludes the data and information of LG Energy Solution'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 LG Energy Solution 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 LG Energy Solution 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

LG Energy Solution 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

LG Energy Solution 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

LG Energy Solution 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 LG Energy Solution's actions.

Impact

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

Reliability of Specific Sustainability Performance Information

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

Competence and Independence

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

July 2022 Seoul, Korea

KMR SRV1000 Sustainability Committee Assurance AA1000 Licensed Report 000-129/V3-NBBE9

대표이사 E. J Hwang

Membership

Korean Standards Association(KSA)	Korea Association for Radiation Application	Korea Intellectual Property Association
Korea Battery Industry Association	Chungnam Environment Association	Korea Smart Grid Association
Advocate for Advanced Battery Technology in North America	Korean Nurses Association	Korea Electrical Manufacturers Association
Korea-America Association	Korean Association of Occupational Health Nurses	Clean Energy Council Limited
Seoul Chamber of Commerce & Industry	Nurses Association	CONCERT : CONsortium of CERT
National Academy of Engineering of Korea (joined in June, 2022)	Korea Fire Safety Institute	Chief Technology Officer Club Korea Industrial Technology Association
AMCHAM (scheduled to join in June, 2022)	Korean Association of Occupational Health Nursing	The Materials Research Society of Korea
Korea Chemicals Management Association	Chungcheongbuk-do Nurses Association	Hanyang University Battery Center
Korea Special Library Association	Korea Industrial Safety Association	Management Corporation for Cheongju Industrial Complex
Korea Exchange	The Korean Statistical Association	The Korean Society of Mechanical Engineers
RBA (Responsible Business Alliance)	ESA(The U.S. Energy Storage Association)	INTA(International Trademark Association)
UNGC(UN Global Compact)	Innopolis Daedeok Safety Consultative Group	The Korean Society for Technology of Plasticity
GBA(Global Battery Alliance)	Korea AEO Association	Korean Society for Computational Fluids Engineering
FCA(Fair Cobalt Alliance)	Korea Fair Competition Federation	The Korean Institute of Electrical Engineers
Korean Association of Industrial Technology Security	Korea Investor Relations Service	Korea Electric Association
Korea International Trade Association	Korea Listed Companies Association	Korea Electric Engineers Association
Korea Environmental Engineers Association	Chungbuk Enterprises Federation	RBA(Responsible Business Alliance)
Chungcheong Committee of Chemical Safety Community	Ochang Scientific Industrial Complex Management Corporation	RMI(Responsible Mineral Initiative)
Environmental Preservation Association in Chungcheongbuk-do and Sejong	Cheongju Chamber of Commerce and Industry	RLI(Responsible Labor Initiative)
Environmental Preservation Association in Daejeon and Chungcheongnam-do	Korean Society for Quality Management	RECHARGE (The Advanced Rechargeable & Lithium Battery Association)
Green Business Council	Seoul Bar Association	
Korea Environmental Engineers Association in Daejeon, Sejong, and Chungcheongnam-do	Korea Electric Vehicle Association	
Fire Safety Measure Council	The Korean Society of Automotive Engineers	
CESA(California Energy Storage Alliance)	CNESA(China Energy Storage Aliance)	

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This report lessened the use of toxic ingredients by using eco-friendly soy ink, and FSC certified paper (cover - FSC certified paper / inner - 100% FSC recycled paper) is also used.