

ESG REPORT

2020



Overview

This report is the first ESG report published since the split-off of LG Energy Solution in December 2020. It focuses on the ESG strategic framework established in 2021. LG Energy Solution is dedicated to systematically managing the performance under ESG strategy and to disclosing ESG-related data in a transparent manner by publishing the annual ESG report both in Korean and English on the website.

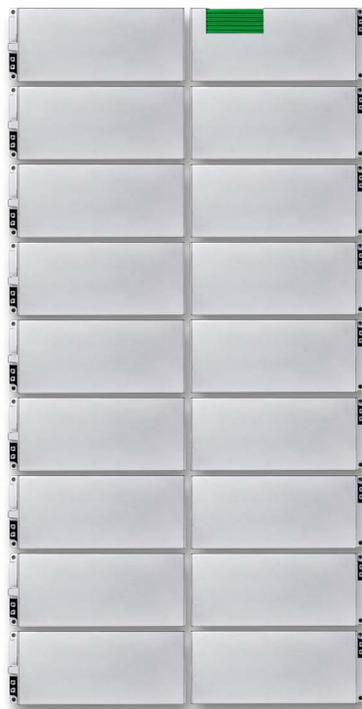
Reporting principles

This report has been prepared using global sustainability reporting standards, including the core option of the Global Reporting Initiative (GRI) standards, Value Reporting Foundation Sustainability Accounting Standards Board (VRF SASB) standards, and the Task Force on Climate-Related Financial Disclosures (TCFD) framework. Also included in the report are the measures to achieve the Sustainable Development Goals.

Reporting period

This report takes into account quantitative and qualitative activities as well as performance from January 2, 2020 to December 31, 2020. Contents regarding the Board of Directors, ESG Committee, and ESG management strategy include the performance in the first half of 2021. In terms of quantitative performance, we improved the comparability by disclosing the three-year data between 2018 and 2020, which is before the corporate split-off (from LG Chem’s Battery Unit).

About



Reporting scope

The information in this report covers the headquarters in Seoul, R&D Campuses in Daejeon, Gwacheon and Magok, and 2 plants in Ochang in the Republic of Korea. Global business sites include all overseas manufacturing plants in the U.S., China and Poland, as well as marketing subsidiaries in Australia, Germany, and Taiwan. K-IFRS Consolidated Financial Statement Standards were applied for reporting on financial information. For non-financial information with a different reporting scope, it is separately indicated.

Report assurance

To ensure the reliability of the reporting process and information contained in the report, LG Energy Solution engaged with the Korea Management Registrar (KMR), an independent assurance institute. Specific details can be found on page 112.

Report drafting department

Inquiries regarding the report shall be directed to the contact details below.
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Chapter I

Company Overview







We CHARGE
toward a better future

Dear stakeholders of LG Energy Solution,

Following the expansion of the battery business, LG Energy Solution separated from LG Chem in December 2020, to ensure more flexible decision-making and efficient organizational operation. We started the research of lithium-ion battery back in 1992, followed by mass production of Korea's first lithium-ion rechargeable battery in 1999, and its application to vehicles for the first in the world in 2009. We have demonstrated technological excellence, upheld by the highest number of patents, approximately 24,000, the highest market share in the global EV battery market and the highest production capacity worldwide.

With more countries recently strengthening their eco-friendly policies by declaring carbon neutrality and shifting to renewable energy, the conversion of combustion engine vehicles to EVs is expected to accelerate. By 2025, global EV battery market is expected to surpass semiconductor memory market. In order to sustain as a "valuable company" in the rapidly changing global business environment, we will continue to build on internal stability and strengthen ESG management together with our stakeholders.

2021 signals the beginning of LG Energy Solution's ESG management and we will build on ESG competitiveness, leading the way to exceed market and customer's expectations.

We have set the ESG vision "We CHARGE toward a better future" and mid- to long-term strategies, and selected the eight ESG critical areas: ① Climate Action, ② Circular Economy, ③ Human Rights Management, ④ Human Capital Management, ⑤ Product Responsibility, ⑥ Environmental Safety and Health, ⑦ Responsible Supply Chain Management, and ⑧ Shared Growth and Greater Impact on Local Communities. We will take preemptive measures in response to ESG regulation, which is becoming stronger, particularly in the EU and the U.S., and create value that exceeds the market and customer's expectation.

We will prioritize to promote climate action, human rights, and diversity as core competitive edge throughout value chain.

LG Energy Solution is the first in the global battery industry to have joined RE 100^{Renewable Electricity 100%} and EV100^{Electric Vehicle 100%} at the same time. We will complete implementing RE100 and EV100 in domestic and overseas business sites by 2030, and achieve carbon neutrality by 2050 to demonstrate responsible actions to the future generation. In addition, we will create a corporate culture that promotes diversity and inclusiveness so that our employees can make the best use of their abilities regardless of their race or gender.

We will improve social/environmental values throughout the life cycle of batteries.

As of July 2021, the order backlog of EV batteries reached KRW 180 trillion, positioning LG Energy Solution as the world's leading battery company. This, however, is just the beginning of the journey where we strive to provide service that creates new values of batteries. To this end, we will implement a complete closed-loop throughout global business sites by 2025, contributing to building a circular economy, and embed ESG management in our business strategy — for example, utilizing used batteries for constructing a fast-charging energy storage system ESS.

LG Energy Solution, since 30 years ago, has been a company that always looks ahead into the future. We will not only provide the highest technology and quality for the customers and shareholders, but also continue ESG management as part of our core business competitiveness.

We will continue to lead eco-friendly business and embody the value of shared growth, which will support sustainable growth and development of employees, and thereby our employees can feel the pride of working at LG Energy Solution. We ask for your continued support and encouragement, as well as constructive feedback.

Thank you.

August 2021
CEO Jong-hyun Kim of LG Energy Solution



Board Message

CPO
Myung Hwan Kim
President

We will fulfill our social responsibilities as the top leading company in the world and create sustainable business environment.

ESG management, a topic in the limelight, is a prerequisite to become a sustainable business. Above all, climate action is an issue that directly leads to the survival of the humankind. Therefore, LG Energy Solution is striving to accelerate the transition toward carbon neutrality by establishing “Dream Fab” with the highest energy efficiency and early completion of “RE100.” In addition, we have established the ESG management system to facilitate the transition to renewable energy and reduction of carbon emissions in the supply chain as well as across our business sites. Through these activities, we will continue to fulfill our social responsibilities as a global leader in the battery manufacturing industry and create sustainable business environment.



CHO
Heungsik Kim
Executive Vice President

ESG is an indispensable element of sustainable corporate management. ESG management is key to responding to the call of our times that requests a company to proactively contribute to a healthy, safe, transparent and fair society. At the center of ESG management are people. The ownership of ESG management belongs to the employees of LG Energy Solution. In the wake of becoming a global leader, we will accelerate all our efforts to stand at the fore of ESG management by supporting our employees, who come from different backgrounds and bring in diverse perspectives.



CFO
Chang Sil Lee
Senior Vice President

ESG is no longer a pressure or regulation that holds a company back. Rather, it should be considered as part of asset or market mechanism management from investors' perspective and systematically managed by combining with financial factors. In order to build a solid foundation, not disturbed by unexpected changes to business environment, we will clearly define and embed ESG into business management strategy, raise awareness of employees, proactively address any of emerging ESG issues, and thereby turn crisis into opportunity.



CRO
Woong Jae Han
Senior Vice President

In the rapidly changing global business environment, crisis comes regardless of region or industry. From the management of the supply chain, safety of operating sites, to quality of products, crisis can occur in real life anytime, anywhere, and thus, company's crisis management capability is crucial to ESG management. LG Energy Solution focuses on managing safety, quality and compliance risks. This is in pursuit of protecting life and customer values, as well as transparent and reasonable decision-making system and fair transactions. The Chief Risk Management Officer (CRO) takes up an assisting role to the CEO and oversees risk detection and management in normal times. During unforeseen events, the CRO supports and supervises damage recovery, business recovery and prevention of recurrence. We will put utmost efforts to preventing crises and strengthening solutions so that ESG takes a deep root at the core of LG Energy Solution.



Division Leader,
Advanced Automotive Battery Division

Dong-Myung Kim
Executive Vice President

Rechargeable batteries are the key contributors to a company's sustainable growth through achieving carbon neutrality. With environmental regulations aiming at achieving carbon neutrality and demands for virtuous cycle of resources increasing, recycling and reusing batteries has become a blue ocean with great potential. Based on our excellent technological advantage, and by putting more efforts to R&D and investments, we will fulfill the roles as a leader of the battery ecosystem. Moreover, we will go beyond responding to issues and create new business opportunities through open innovation with social ventures that can bring in diverse and innovative ideas.



Division Leader,
Mobility & IT Battery Division

Wonjoon Suh
Senior Vice President

The post-COVID-19 recovery and climate action are undoubtedly a vital element in corporate activities, and carbon neutrality has now become a game changer in the global market. We need to accept that there will be no future for us without taking actions now; taking preemptive and appropriate actions is more important than ever. Through business expansion of LG Energy Solution where the business itself is eco-friendly, we will find solutions to the future generation's environmental issues and offer maximum comfort in daily life.



Division Leader,
ESS Battery Division

Youngjoon Shin
Senior Vice President

ESG should be taken on the long-term perspective of a company, not as a short-term income source of business profits. To enable stable usage of renewable energy, which is the backbone of the solutions to various social and environmental issues arising from reckless use of resources, we will facilitate ESS and reuse of batteries, and lead changes in life. LG Energy Solution is dedicated to quickly adapting to the business environment with ESG of greater importance, and to grow faster than our competitors.



**Group Leader,
Corporate Strategy Group**

**Seungse Chang
Senior Vice President**

LG Group takes a deep philosophical root of ESG management. LG Energy Solution, since its foundation, shares the core values of ESG management, such as customer-value creation, people-oriented management and Jeong-Do management, on top of its eco-friendly business. Through more active and bold moves to make cleaner batteries, we will continue to pursue sustainable growth with ESG as its competitive edge.



**Group Leader,
Corporate Affairs Group**

**HwanDoo Sung
Senior Vice President**

More and more stakeholders, including our customers and governments, are showing their interests and demands toward ESG management. We feel great responsibility more than ever to set up ESG management strategies, analyze the ESG mega trend and stakeholder demands and reflect them throughout the value chain, and communicate the plans and progresses in a transparent way. Since we are in full charge of LG Energy Solution's overall ESG management, we will oversee from the start to the end of ESG management to become an exemplary case globally.



**Center Leader,
Global SCM Center**

**Dong Soo Kim
Senior Vice President**

In order to promote future business competitive edge, LG Energy Solution is engaged in multifaceted collaboration with various stakeholders in the supply chain with an aim to establish a sustainable purchasing ecosystem. By systematically identifying and managing human rights and environmental risks in the supply chain, reducing carbon emissions through conversion to renewable energy, and designing and implementing a closed-loop, LG Energy Solution will take on a pioneer role to establish a sustainable battery value chain from the perspective of ESG management.



Company Profile

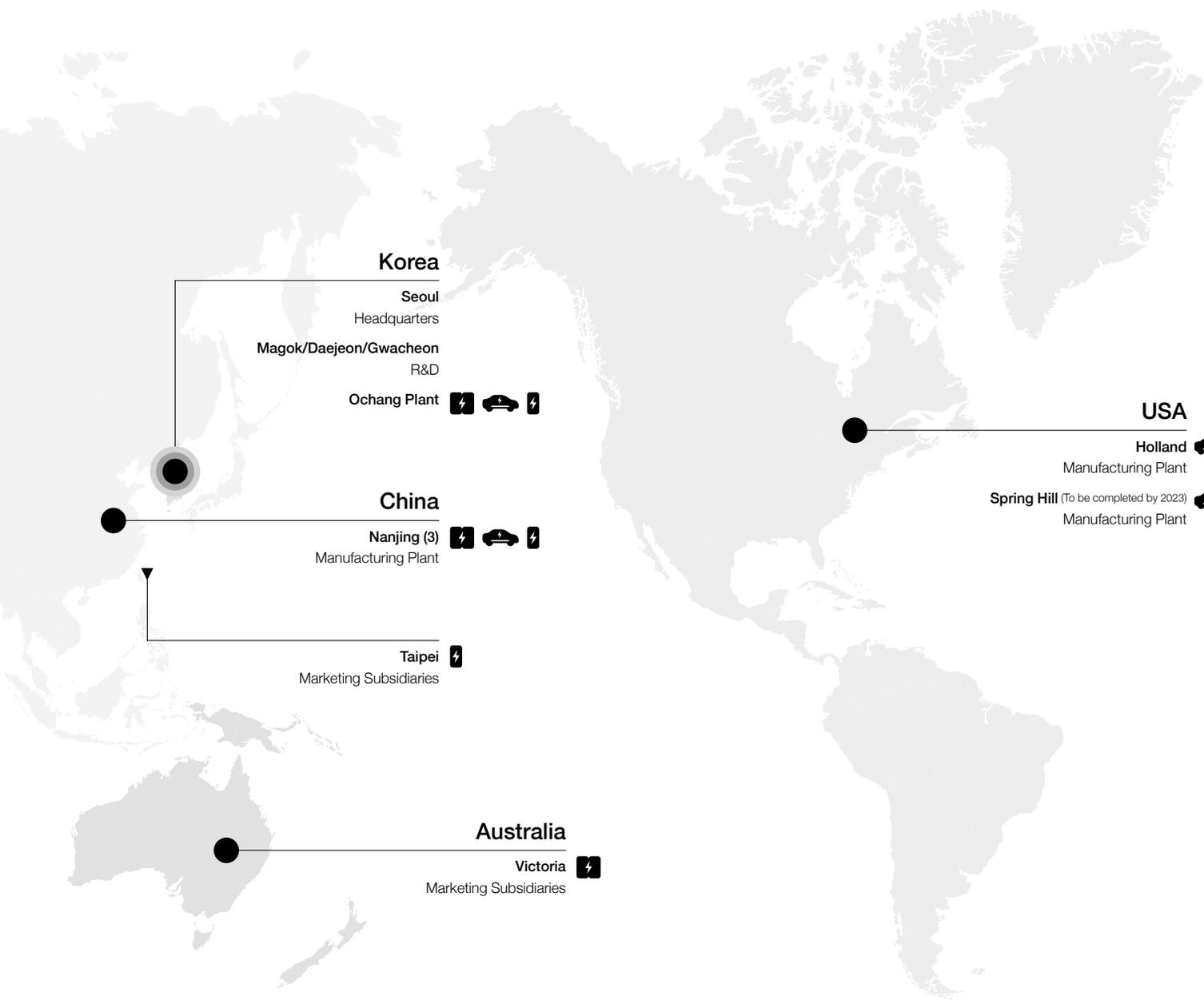
LG Energy Solution is a global battery company that produces automobile, IT & new application, and ESS batteries. The company was founded as a split-off from LG Chem's Battery Unit in December 2020.

Based on our technological edge obtained through active R&D investment and talent seeking, we are further strengthening our leadership in the next-generation energy market by establishing a global production network (Korea / U.S. / Poland / China).



- ESS battery 
- Advanced Automotive Battery 
- Mobility & IT Battery 

Company name	LG Energy Solution
CEO	Kim Jong-hyun
Headquarters address	108, Yeoui-daero, Yeongdeungpo-gu, Seoul
Date of establishment	December 2020
Business details	Automobile battery / Mobility & IT battery / ESS battery
Products	EV/PHEV/HEV batteries, IT equipment / Power Tools / LEV batteries Grids / Commercial / Residential ESS batteries, etc.
Website	www.lgensol.com



Global Business

LG Energy Solution established global networks in Korea, the U.S., China, etc. with approximately 20,000 employees working in seven major business sites.

Advanced Automotive Battery



Automobile Battery

LG Energy Solution has contributed to the commercialization of EVs with its world-best technology-based battery products. We continue to improve battery stability based on outstanding material competitiveness and have a diverse product portfolio ranging from battery cells, modules to packs.

Application:

battery electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), hybrid electric vehicles (HEVs), etc.

Mobility & IT Battery

IT & new application 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 wireless vacuum cleaners.



- Cylindrical**
- High energy density
 - High output power
 - Standard size

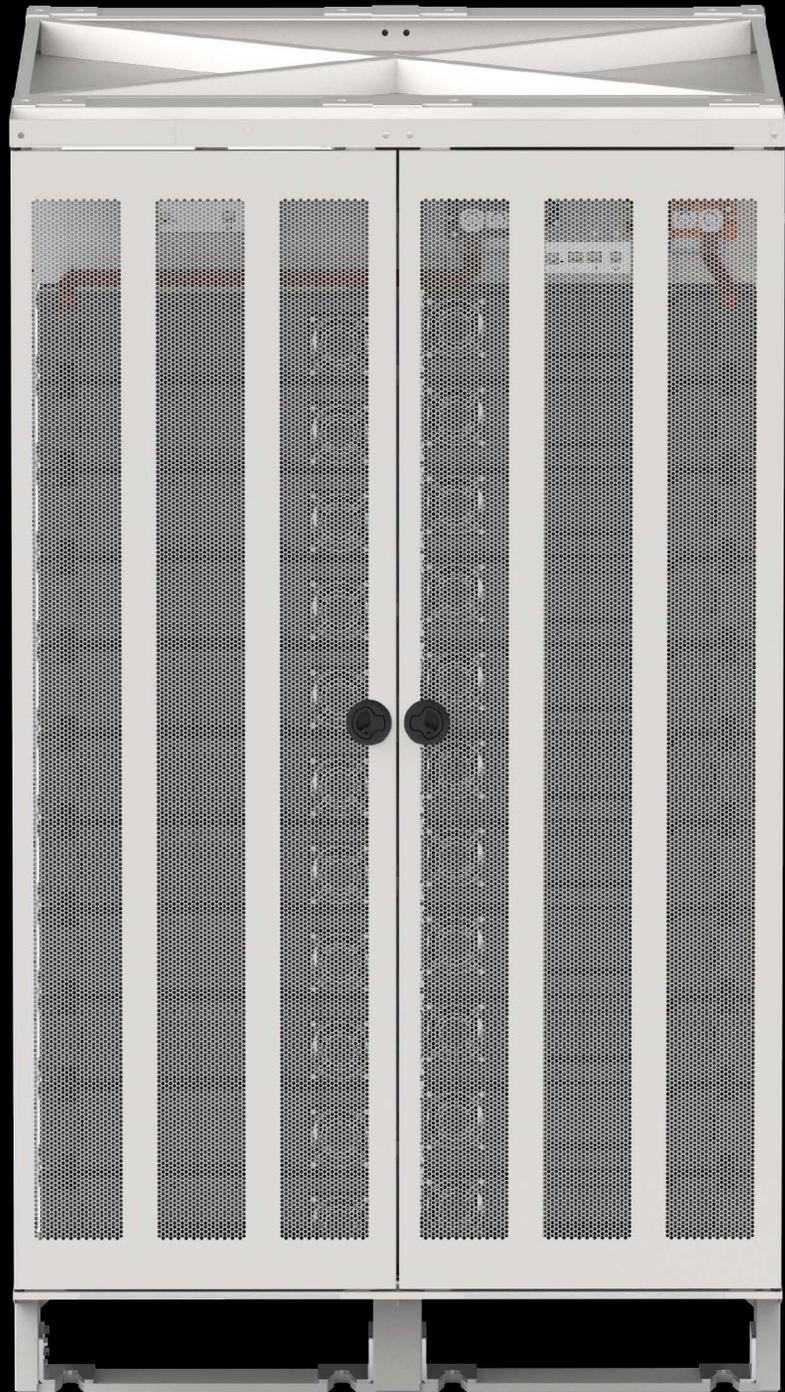


- Pouch**
- Ultra-slim
 - High-density
 - Size diversification



- Free-form**
- High energy density
 - Maximum space utilization
 - Optimized battery design

ESS Battery



ESS Battery

LG Energy Solution is opening the era of smart grids by improving energy utilization efficiency and stabilizing renewable energy systems by producing ESS with high-capacity battery cells with a uniform energy output, long battery life and stable structure.

Application:
Residential ESS, Grid/Commercial
ESS, Back-up power solution

Financial Performance

The information below takes into account the data from 2020 Business Report for the period between December 1, 2020 and December 31, 2020, after the split-off.

Sales and Performance

Financial Information

The company was founded on December 1, 2020 and the below represents the sales amount and operating loss of December 2020 (1 month long period).

(Unit: KRW million)

	1st Term (Current Term)
Sales amount	1,461,068
Operating loss	(475,206)
Assets	19,941,795

Sales Performance

The company was founded on December 1, 2020 and the below represents the sales performance of December 2020 (1 month long period).

(Unit: KRW million)

Sales Type	Item		1st Term
Products	EV battery, ESS battery, Mobility&IT battery, etc.	Export	1,185,361
		Domestic	275,707
		Total	1,461,068

1st Term from December 1, 2020 to December 31, 2020

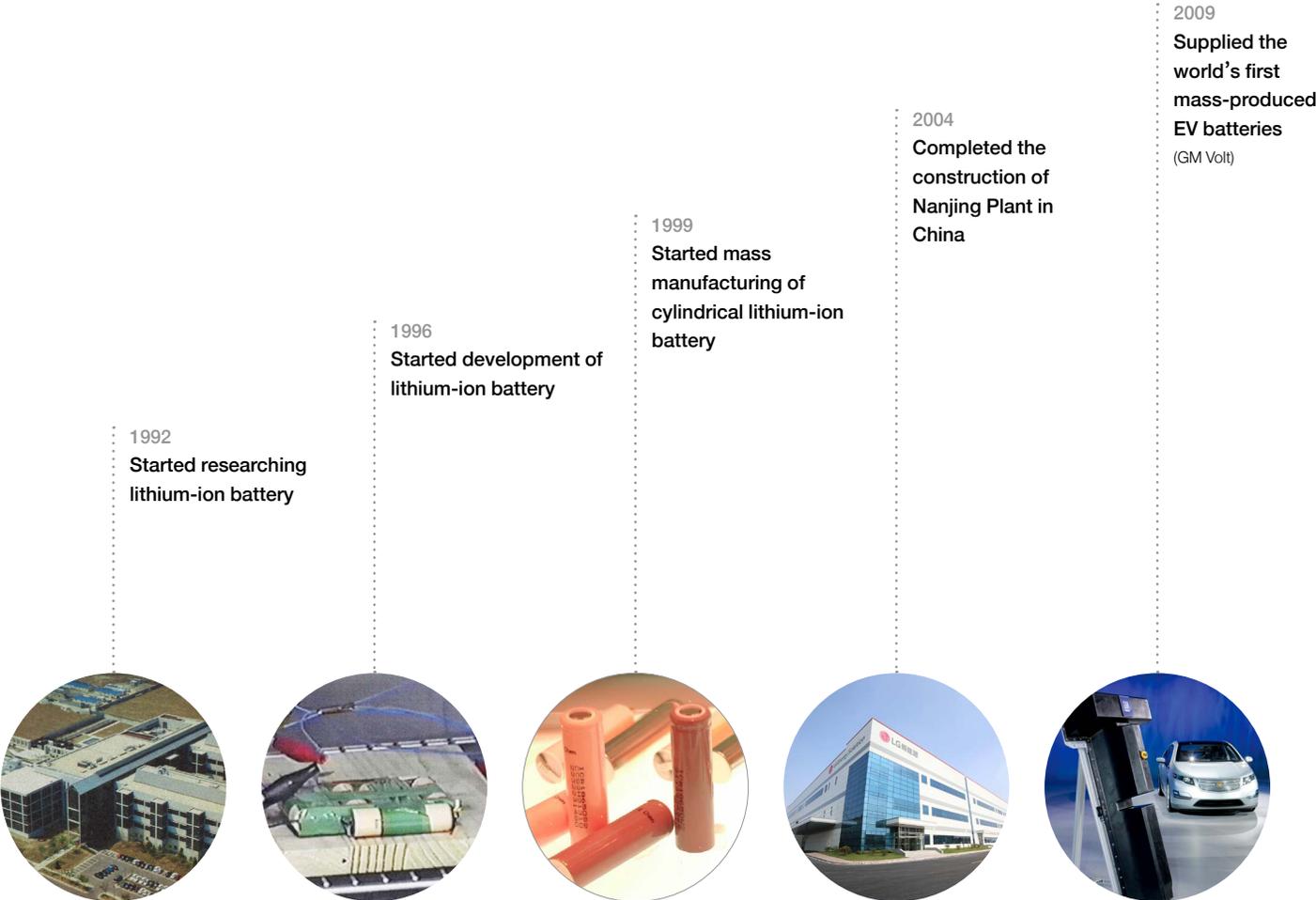
(Unit: KRW million)

	1st Term
Sales	1,461,068
Cost of sales	1,237,020
Gross margin	224,048
Sales and administrative expenses	699,254
Operating loss	(475,206)
Financial revenues	28,840
Financial expenses	138,843
Equity method net profit	1,206
Other non-operating income	52,215
Other non-operating expense	73,066
Net loss before income taxes	(604,854)
Income tax revenues	(147,345)
Net loss of the term	(451,771)
Discontinued operating profit	5,738
Net loss of the term	
Proprietary equity of governing company	(455,515)
Continued operating loss	(460,147)
Discontinued operating profit	4,632
Non-controlling interests	3,744
Continued operating loss	2,638
Discontinued operating profit	1,106
Profit or loss per share on the owner's equity of governing company	
Basic and diluted loss per common share	(2,278)
Basic and diluted continued operating loss per common share	(2,301)

History Behind the Development of LG Energy Solution

LG Energy Solution is acknowledged as an unrivaled industrial leader in the lithium-ion battery manufacturing sector, based on the wealth of experience of providing quality products and solutions to customers in the global market.

As the world's only battery manufacturer that originated from a chemical company, LG Energy Solution is leading the global battery manufacturing industry based on the technologies to develop differentiated materials and experience in leading the market. We are reinforcing our leadership in the next-generation energy market, securing the world's largest production capacity in the four global manufacturing sites based on our advanced technology.



2012
Completed the construction of EV battery plant in the U.S.



2013
Developed the world's first futuristic batteries (Stepped, Curved, Wire Battery)



2017
Completed the construction of EV battery plant in Poland



2018
Developed the world's first free-form battery



2020
Established LG Energy Solution



ESG Focus

LG Energy Solution is carrying out various ESG management activities in consideration of environmental and social issues throughout the value chain in purchasing raw materials, R&D, production, and usage/disposal.



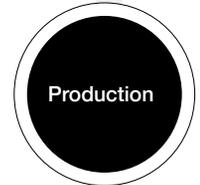


Development of Eco-Friendly Innovative Technology

- R&D of unparalleled cell material and next-generation cell technology
 - R&D Investments: KRW 320 billion (2018) → KRW 387 billion (2019) → KRW 422 billion (2020)
- Product and Environmental Liability
 - Secure 100% eco-friendliness for domestic and foreign materials/products by 2023

HR Policy Promoting Diversity

- Operating various programs to improve awareness to diversity
- Establishing strategies to manage diversity in each country



Safety and Environment-Oriented Management and Accident Prevention

- Obtained ISO14001 & ISO45001
- Work in progress to achieve zero critical accident rate

Climate Action & Renewable Energy

- Achieving carbon neutrality by 2050
- Completing RE100 by 2030
 - Renewable energy conversion rate increased from 30% (2020) to 100% (2030)
 - Transition to 100% renewable energy completed in Poland and the U.S.
 - Work in progress to complete the transition in Korea and China

Chapter II

ESG Strategy





ESG Strategy

With the establishment of LG Energy Solution's ESG strategy in the first half of 2021, we have been actively embedding it to our business principles. Based on a keyword "CHARGE," we developed an ESG strategic framework and management system with eight ESG critical areas and four enablers.

C	H	A	R	G	E
Climate Action & Circular Economy	Human Value Management	Advanced EH&S	Responsible & Impactful Business	Good Governance	ESG Disclosure & Communication
<ul style="list-style-type: none">- Climate Action- Circular Economy	<ul style="list-style-type: none">- Human Rights Management- Human Capital Management	<ul style="list-style-type: none">- Product Stewardship- EH&S	<ul style="list-style-type: none">- Responsible Supply Chain Management- Shared Growth and Greater Impact on Local Communities	<ul style="list-style-type: none">- Compliance- Governance	<ul style="list-style-type: none">- Communication- ESG initiative

ESG Strategic Framework

We have identified 30 key, including 7 core tasks, for the systematic and sustainable implementation of 8 critical areas and 4 enablers of ESG strategy, represented in the abbreviation, CHARGE, and have developed a task-specific roadmap to ensure transparent and accountable implementation of all tasks.

Let's make LG Energy Solution the 'most valuable company' in the global market, to our customers, shareholders, members and society.

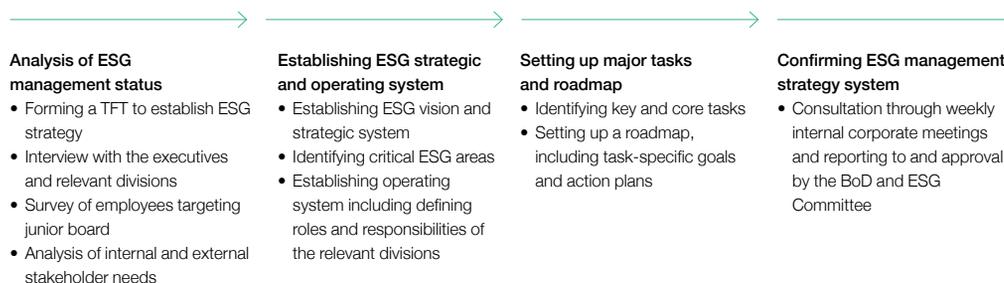
— Excerpt from CEO's 2021 New Year's address

Background of Establishing ESG Strategy

As stakeholders' demands on ESG management increase worldwide, such as greenhouse gas (GHG) emissions reduction, renewable energy use, and diversity issues, and have a significant impact on mid- to long-term corporate value, we have established a strategic framework by thoroughly examining stakeholders' ESG requirements and internal ESG capabilities, and aim to disclose information in a transparent manner on the progresses and plan to implement the ESG strategy.

Strategy Establishment Process

In the first half of 2021, we established ESG vision, strategic framework and roadmap by setting up a Task Force Team (TFT) on ESG strategy establishment, and garnering the engagement of the executives.



Strategic Framework

In order to contribute to building the global green battery ecosystem and sustainable development for future generations, LG Energy Solution defined 30 key tasks related to 8 critical areas and 4 major enablers under the vision of “We CHARGE toward a better future” and set goals for each task.

ESG Vision

We CHARGE toward a better future

8 Critical Areas and 4 Enablers



30 Key Tasks ● 7 Core Tasks

Climate Action

- ① Setting up and managing mid- to long-term GHG reduction targets
- ② Developing energy efficiency index
- ③ Establishing global integrated energy system
- ④ Continuously improving energy intensity
- ⑤ Transition to 100% renewable energy (achieving RE100)
- ⑥ Transition to 100% electric vehicles (achieving EV100)
- ⑦ Building LCA management system and reducing carbon emissions from products
- ⑧ Transition to renewable energy in supply chain

Circular Economy

- ⑨ Developing a global business model for battery reuse
- ⑩ Developing a global business model for recycling

Human Rights Management

- ⑪ Declaration on corporate principles on human rights
- ⑫ Managing human rights risks in global business sites

Human Capital

- ⑬ Raising awareness of diversity
- ⑭ Promoting diversity in human capital management

Product Stewardship

- ⑮ Strengthening product stewardship
- ⑯ Building capacity of employees and suppliers on product stewardship

EH&S

- ⑰ Improving EH&S management system
- ⑱ Mitigating EH&S risks in business sites

Responsible Supply Chain Management

- ⑰ Improving ESG risk management system in supply chain
- ⑳ Strengthening due diligence in major raw materials supply chain

Shared Growth and Greater Impact on Local Communities

- ㉑ Providing support programs for suppliers
- ㉒ Engaging in global social impact activities

Compliance

- ㉓ Advancing compliance management system for business sites
- ㉔ Applying ESG compliance to supply chain

Governance

- ㉕ Improving BoD governance
- ㉖ Establishing and managing ESG
- ㉗ Committee ESG risk sensing and analysis

Communication

- ㉘ Establishing ESG data management system
- ㉙ ESG disclosure

ESG Initiative

- ㉚ Engaging in global initiatives and promoting partnership

Selecting Core Tasks

Taking global and battery industry-level ESG megatrends and stakeholder needs into consideration, 7 core tasks are identified among 30 key tasks.

Key Task	Goal	Status and Plan
1 Transition to 100% Renewable Energy (RE100)	100% transition to renewable energy across all global business sites by 2030	<ul style="list-style-type: none"> • Poland & U.S.: Transition to 100% renewable energy completed (through Green Pricing Scheme, Renewable Energy Certificate (REC)) Planning to continuously explore various options, such as PPA, for stable supply of renewable energy • Korea & China: Transition to be accelerated through engaging in national policy instruments and photovoltaic power generation Transition initiated in 2021 by participating in Green Pricing Scheme and purchasing REC, with further options, such as PPA, being reviewed → 100% conversion to be achieved in the existing business sites by 2025 and in new business sites by 2030
2 Setting up and managing mid- to long-term GHG reduction targets	Achieving carbon neutrality by 2050	<ul style="list-style-type: none"> • A roadmap to achieve carbon neutrality by 2050 to be developed (2021) Major GHG reduction measures <ol style="list-style-type: none"> ① Improving energy efficiency (heat recovery, facility improvement, etc.) ② 100% conversion from electricity to renewable energy ③ Conversion from LNG to biomass, considering external business
3 Developing a global business model for recycling	Completing a closed-loop across global business sites by 2025	<ul style="list-style-type: none"> • China: A closed-loop established through collaboration with a local recycling company • Closed-loop to be established in the U.S. (2023) and Europe/Korea (2025) in a phased manner
4 Promoting diversity in human capital management	Establishing a workforce diversity management system	<ul style="list-style-type: none"> • Diversity management index and management system to be developed (2021) Provisional rates <ul style="list-style-type: none"> – Ratio of team leaders locally recruited at overseas corporations: China (90%), U.S. (52%), Poland (39%)
5 Improving ESG risk management system in supply chain	Securing over 90% ESG low-risk group by 2030	<ul style="list-style-type: none"> • According to 2020 ESG assessment of raw materials suppliers Low-risk group (38%), Mid (52%), High (10%) • Low-risk group ratio to be increased about 6% each year with the goal of securing over 90% low-risk group by 2030 through <ol style="list-style-type: none"> ① Conduct of audit and close monitoring of corrective actions in high-risk group ② Providing support programs for suppliers
6 Strengthening Product Stewardship	Using 100% eco-friendly materials/products – Materials (2022) – products (2023)	<ul style="list-style-type: none"> • Product stewardship system established and 100% eco-friendly materials used in domestic business sites • Use of 100% eco-friendly materials and products through establishing product safety system by 2023 <ul style="list-style-type: none"> – Materials mass-producing system to be applied in China (2021), Europe & U.S. (2022) – Product inspection to be implemented (2022) and R&D materials/products system to be applied (2023)
7 Mitigating EH&S risks in business sites	Zero EH&S accidents	<ul style="list-style-type: none"> • Work in progress to improve fundamental cause through the fatality inspection (2021) Task Force established to prevent fatalities and serious accidents, risk inspection system established (Responsible Safety Zone management) • Improving the response system for accident prevention EH&S protocol Revision, DX Technology development to prevent EH&S accidents

Governance

Details of the ESG governance are contained on p.66.

In June 2021, LG Energy Solution established the ESG Committee within the Board of Directors; the ESG Team serves as Secretariat. The implementation plans and progress of ESG strategic framework, as well as global ESG megatrends, are reported and discussed on a regular basis at management meetings and internal consultation platforms.

Climate Action & Circular Economy

LG Energy Solution operates a department dedicated to cope with climate change such as converting to renewable energy and achieving carbon neutrality. More specifically, all of our global business sites have joined both RE100/EV100 contributing thereby to managing energy efficiency and reducing energy consumption in response to climate change. In addition, we are recycling raw materials by utilizing scraps generated during battery production and reusing batteries as part of the strategy for circular economy. By putting forth such efforts, we are raising the social and environmental value of products and creating new business opportunities.

Climate Change Response

As a leading company in the battery industry that plays a pivotal role in achieving a carbon-neutral society, LG Energy Solution considers climate change as one of the critical management issues and proactively addresses it. To this end, we are strengthening collaboration and cooperation with our suppliers and relevant partners with a view to reducing GHG emissions and energy consumption in the business sites as well as in the battery industry as a whole.

Furthermore, we are continuously monitoring climate-related policies and regulations worldwide to take adequate measures in a timely manner and thereby minimize business risk. In addition, by proactively responding to customers and investors' demands on climate action, promoting R&D of high-efficiency batteries and renewable energy-linked ESS projects, we minimize adverse impacts of climate change on environment and society and convert them to opportunities to create economic value.

Setting Carbon Neutrality Goal

RE100
Renewable Electricity 100%

EV100
Electric Vehicle 100%

With the goal of achieving carbon neutrality by 2050, LG Energy Solution has introduced various GHG reduction activities. In particular, we joined both RE100 and EV100 initiatives for the first time in the global battery industry in April 2021 with an aim to reduce by making transition to renewable energy and eco-friendly vehicles. Through this, we promised to convert electricity of all business sites, including new sites, to renewable energy by 2030, and convert 100% of corporate-owned and leased vehicles weighing less than 3.5 tons and 50% of vehicles weighing 3.5 to 7.5 tons to eco-friendly vehicles by 2030.

More than approximately 70% of total GHG emissions from our battery manufacturing process comes from the use of electricity, and substantial amount of GHG emissions can be reduced by using renewable energy. Along with making transition to renewable energy, we plan to achieve carbon neutrality by 2050 through improving energy efficiency in battery production process, introducing new technology and highly efficient production facilities, and promoting carbon offset projects in connection with battery business.

Climate Action Governance Structure

LG Energy Solution is operating a department dedicated to tackling climate change. Our headquarters and business sites are in collaboration to set mid- to long-term targets to reduce GHG emissions and design the implementation plan thereof. The activities include converting to renewable energy across all business sites, managing and reducing energy consumption, participating in emissions trading schemes in Republic Korea and EU, communicating and disclosing relevant information in response to the requests from stakeholders, and continuously monitoring and engaging in domestic and overseas policies, as relevant.

Critical decisions relating to climate action are made at top management meeting participated by C-level and Heads of business sites. The action plans to achieve carbon neutrality, implement RE100, and reduce GHG emissions throughout the supply chain have been established and rolled out.

In addition, LG Energy Solution operates an ESG Committee within the Board of Directors, where ESG-related issues, including climate change, are reported and discussed on a regular basis (biannually or more frequently).

GHG Reduction Program

Facilitating Transition to Renewable Energy (RE100)

In line with globally increasing demands for climate action, companies around the world are expanding the use of renewable energy to reduce GHG emissions and thereby cope with climate emergency. Global initiatives such as RE100 are instrumental for companies to align their plans and promote collaboration towards the transition to renewable energy.

LG Energy Solution aims to respond to the needs of customers, investors, and stakeholders and to take the lead in the transition to renewable energy as a leading company in the battery industry, which will be a key driver of a carbon neutral society. As of 2020, we have converted more than 30% of electricity to renewable energy, and plan to complete 100% transition in all domestic and overseas business sites by 2030.

The manufacturing facilities in Poland and the U.S. have completed 100% transition to renewable energy through Green Pricing scheme and purchase of Renewable Energy Certificate (REC). Korean and Chinese business sites are gradually increasing the use of renewable energy, as well. Ochang Plant in Korea is operating 1.2 MW-scale photovoltaic facilities and participating in Korean Green Pricing scheme as part of its efforts to complete the transition to renewable energy. In addition, plans to expand manufacturing facilities are in progress, in response to growing demands for batteries worldwide. Instruments such as Power Purchase Agreement (PPA) are being explored from the facility design phase to ensure the stable supply of renewable energy in the new business sites.

For the phased RE100 conversion by 2030, LG Energy Solution will continue to make efforts to secure various renewable energy portfolios, including PPA, Green Pricing scheme, and REC, and take the lead in producing eco-friendly batteries.

Risks and Opportunities for Carbon Reduction

GHG Emissions Reduction in Transportation (EV100)

LG Energy Solution promised to convert 100% of the owned and leased vehicles weighing less than 3.5 tons and 50% of those weighing over 3.5 to 7.5 tons into eco-friendly vehicles by 2030.

The transportation sector accounts for more than 20% of global GHG emissions, and the transition to eco-friendly vehicles is an important means to reduce GHG emissions. As a manufacturer of batteries, a key component of EVs, LG Energy Solution is dedicated to taking the lead in transition to eco-friendly vehicles and contributing to GHG reduction.

We are gradually converting the vehicles used in domestic and overseas business sites to eco-friendly vehicles, and EV charging stations are being installed across all domestic sites. Taking the diversification of EV models in the coming years into consideration, we plan to convert vehicles at all business sites into EVs in a phased manner by 2030.

Climate Action Communication

LG Energy Solution provides information on product carbon footprint, including carbon labeling and information on associated GHG reduction activities, upon the request of stakeholders. We will continue to actively support decision-making of shareholders and investors by disclosing and communicating in a transparent manner climate-related information, including energy and GHG, through regular business reports, ESG Reports, CDP annual reports, etc.

Climate change is a global issue of great importance that transcends national and business boundaries. It is widely recognized as an essential part, not an option, of sustainable business growth. It is therefore critical to keep a keen eye on climate ambition and policy instruments set out by other countries—particularly, EU, the U.S. and China—including carbon neutral goals, carbon border tax, reinforced emissions standards for vehicles, and on an increasing number of countries joining global initiatives such as RE100.

Furthermore, the financial sector increasingly requests companies to take climate action and disclose climate-related information in a transparent manner, using global sustainability standards, such as Taskforce on Climate-Related Financial Disclosures (TCFD) and Value Reporting Foundation Sustainability Accounting Standards Board (VRSASB).

To this end, LG Energy Solution classifies climate risks by government/customer, supply chain, and stakeholders, and sets action plans for each issue to manage opportunities and threats.

Threats and Opportunities of Climate Change

Category	Risk factor	Activity	Expected outcome
Government / customer	Emissions trading scheme (ETS)	Establishing and operating ETS management system	Lowering costs incurred by purchasing carbon allowance
	Demand for renewable energy	Transition to 100% renewable energy by 2030 (Joining RE100)	Reinforcing the position as a global leader in tackling climate change Creating opportunities for renewable energy-linked ESS projects
	Carbon border adjustment mechanism / EU battery regulations, etc.	Strengthening management of product carbon footprint Increasing recycling & reuse of materials	Strengthening product competitiveness from a perspective of LCA Expanding business opportunities of battery recycling & reuse
	Energy efficiency management	Establishing an integrated energy efficiency management system and promoting energy saving activities	Lowering operating costs by reducing energy consumption
Supply chain	Reducing GHG emissions from supply chain	Developing and implementing a plan to support the transition to renewable energy in supply chain	Strengthening product competitiveness from a perspective of LCA
	Battery recycling	Increasing recycling & reuse of raw materials	Expanding business opportunities of battery recycling & reuse
Shareholders / investors	Stakeholder communication	Strengthening disclosure of climate-related information, including via TCFD, CDP	Reinforcing the position as a global leader in tackling climate change
	Response to emerging domestic and overseas policy and regulation	Establishing and continuously enhancing a strategic framework for climate action	

GHG Reduction Performance

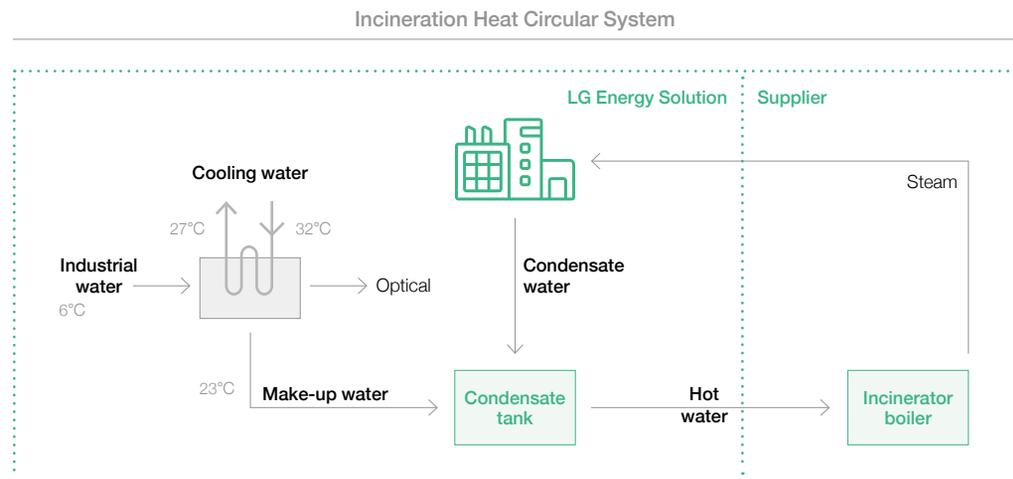
LG Energy Solution is participating in the emissions trading schemes in Korea and Europe, respectively, and devising cost-effective measures to reduce GHG emissions.

Based on our analysis on energy use, more than 70% of our GHG emissions comes from the use of electricity (Scope 2). By joining RE100 initiative in early 2021, we declared to make transition to 100% renewable energy by 2030, by which it is expected to reduce significant amount of GHG emissions. In addition, with a view to reducing GHG emissions from direct sources (Scope 1), including from the use of LNG, we will continue to explore measures to improve energy efficiency, such as improving the production process and introducing highly efficient production facilities. On the long term, we aim to achieve carbon neutrality by 2050.

Energy Saving / GHG Reduction Activities

LG Energy Solution sets annually an energy saving plan, aiming at saving about 5% of the total energy consumption estimated for the year. In particular, Ochang Plant in Korea won Top Energy Management Leadership Award at 2016 Clean Energy Ministerial (CEM), which convened 24 countries, including the U.S., EU and China, and 3 international organizations including IEA. It continues to explore and carry out activities to reduce energy consumption.

Key energy saving activities include establishing an eco-friendly key energy saving activities related to the improvement of the production process, including circular resource system that generates steam reusing the heat from solid waste incineration, an exhaust heat recovery system. Furthermore, we keep exploring and devising various measures to save energy consumption and thereby reduce GHG emissions at business sites, including optimizing the heating, ventilation and air conditioning system, improving the efficiency of chiller and cooling tower, and introducing Factory Energy Management System (FEMS). In addition, we developed and distributed a technical manual compiling technologies and good practices of saving energy consumption over the past decade, as well as relevant theories and methodologies to support the mainstreaming of energy saving and GHG reduction into the daily work of our staff.



Energy Management System

In 2020, LG Energy Solution established the Global Utility Integrated System for Sustainability (G-UIS) that integrates the energy consumption management across all business sites and manufacturing facilities. G-UIS applies the standardized monitoring package (gauge, operating system display, etc.), and at Ochang Plant, it collects the real-time data on energy use from approximately 60,000 measuring points.

G-UIS helps to manage facilities in a stable and efficient manner by processing information relevant to analyzing energy consumption status and providing real-time information on any issue emerging from major facilities. In addition, it offers various data analysis tools to identify areas of improvement, estimate the level of energy consumption, improve efficiency of facility management, and carry out predictive maintenance.

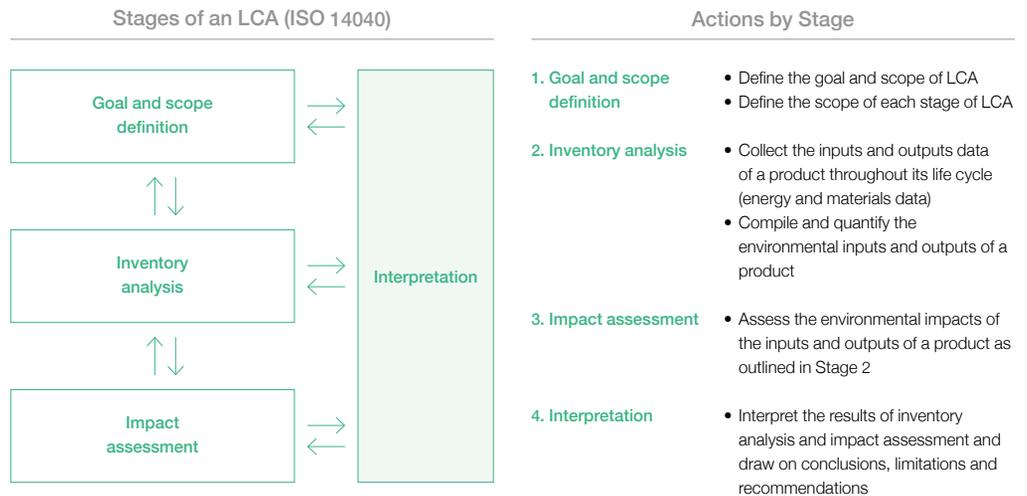
Currently, we are expanding the application of G-UIS system in the business sites in China and Poland and plan to introduce the system in the U.S. in 2022, thereafter to integrate the energy management system across all global business sites. Furthermore, we have established an “energy efficiency indicator system” in conjunction with the production management system to manage energy intensity of and GHG emissions from each site and line product.

G-UIS Structure



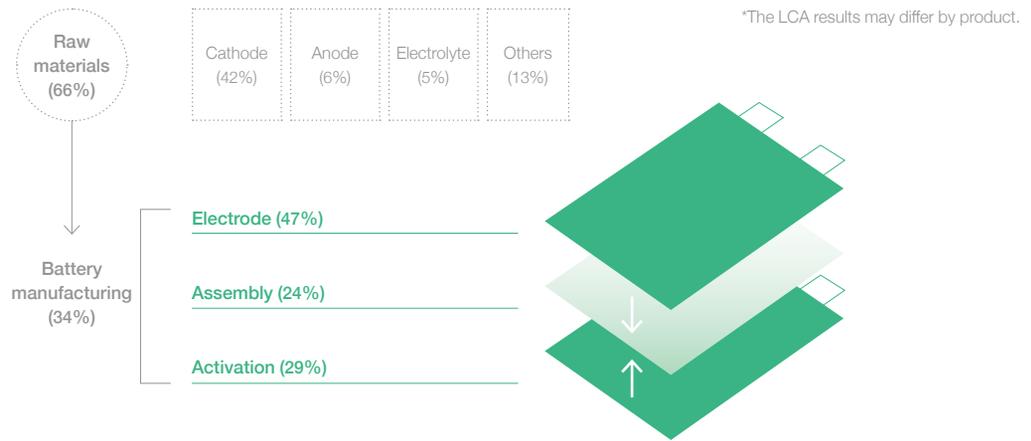
Product LCA Management

Life Cycle Assessment (LCA) is a methodology framework for assessing the environmental impacts of a product life cycle, from cradle to grave. LG Energy Solution undertakes LCA of key products and communicates thereof with relevant stakeholders, including its customers.



In line with more and stronger policies and regulations regarding GHG emissions and recycling of batteries in EU and other countries, it has become critical to minimize the environmental impacts of a product. LG Energy Solution aims to reinforce its competitiveness as leading a low carbon industry worldwide, by calculating product carbon footprint by battery model and acquiring eco-labeling. In addition, we are developing an LCA methodology based on the analysis of relevant methodologies (including ISO 14040/44 and K-ecolabeling), with a view to undertaking LCA in a reliable and accountable manner that meets global standards. We have been also engaging in global initiatives and relevant consultation process to represent the industry in the design of LCA methodology for batteries as part of EU directive.

An LCA of a battery involves inventory analysis of the product, including raw materials and production systems, collection and analysis of data covering the life cycle, and assessment of environmental impacts of the given product. Our LCA of products show that significant level of environmental impacts results from raw materials, such as cathode, which means GHG emissions reduction in raw materials supply chain, as well as in the production process, is important to enhance the product sustainability.



Facilitating engagement and cooperation of suppliers for GHG reduction

More than 60% of the GHG generated from the battery production attributes to raw material production, in particular, cathodes and anodes. As a result, suppliers’ engagement and cooperation is key to reducing GHG emissions throughout the entire value chain. LG Energy Solution compiles energy/GHG data provided by raw materials suppliers and utilizes it to quantify inputs and outputs of a product in LCA. Further, we support the transition to renewable energy and the establishment of highly efficient facilities in supply chain and develop a long-term plan to reduce GHG emissions in the entire value chain.

Developing an LCA Calculation System for Product Sustainability Management

The requests from key stakeholders, including governments and customers, are increasing to manage and reduce environmental impacts of a product through its life cycle. In particular, partners from EU call for various measures to reduce product carbon footprint as a means to addressing climate change.

LG Energy Solution is developing an LCA calculation system to assess the environmental impacts of the products. In doing so, we are developing an LCA methodology taking relevant regulations and guidelines into account and plan to link it with the in-house portal system to facilitate LCA process. Given that third-party LCA verification is expected to become mandatory in near future, we plan to utilize the methodology and results of LCA to acquire eco-labeling, including EU Product Environmental Footprint and Korean eco-labeling.

Circular Economy

Background

The rapidly growing EV market and increasing demand for rechargeable batteries has now drawn attention to the treatment of used batteries given its environmental and economic impacts.

In general, EV battery is considered to have completed its life cycle when it has degraded to 70-80% of its initial capacity. Although the residual capacity may be insufficient for automotive use, it could be re-purposed in other applications. It could be reused for different purposes and dismantled thereafter to extract and recycle critical materials such as Lithium, Cobalt, Nickel and Manganese. By doing so, environmental loads can be reduced and residual value of batteries can be maximized. As a result, building a circular economy for batteries has become an important ESG business model in battery manufacturing industry.

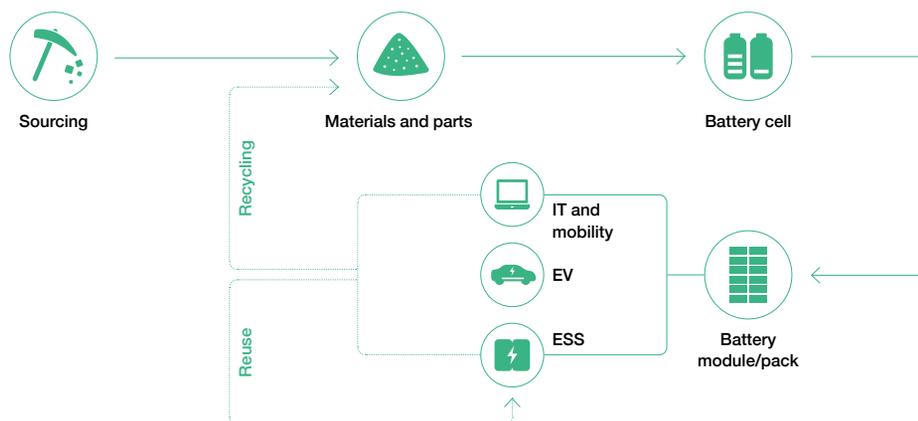
LG Energy Solution is striving to build a closed-loop throughout the value chain ranging from raw materials to production, consumption and disposal of batteries. With a view to meeting global environmental standards, we are collaborating with local partners to reuse batteries as well as recycle the scraps generated during the production process. In particular, we have established a closed-loop in the respective business site in China, by which the used batteries and/or the scraps generated during the battery production are purchased by local recycling companies and the extracted Nickel, Cobalt and Lithium are recycled to produce cathode. LG Energy Solution will capitalize the closed-loop to secure the used batteries.

Strategy/Policy Toward Circular Economy

Based on the wealth of experience and technologies, LG Energy Solution has come up with various means of reuse and recycling of batteries—for example, reuse in ESS, recycling of scraps generated during the production process by applying the optimal recycling technology.

- ① **Reuse:** Used EV batteries could be reused depending on their residual capacity and state of health. We continue to research and develop technology to create various business models, such as battery reuse in ESS and pioneer the establishment of battery circular (second use) ecosystem in collaboration with key OEM partners. We plan to start demonstration of relevant business models across global business sites [starting next year] and strengthen the circular economy by linking with recycling thereafter.
- ② **Recycle:** Batteries that have completed the lifespan or cannot be reused anymore, and scraps generated during the production process could be recycled. A closed-loop entails dismantling waste batteries and scraps, dissolving them, extracting raw materials such as Nickel, Cobalt and Lithium, and using them to produce cathode. The closed-loop, once built, can facilitate recycling of batteries. To this end, our business sites in Europe and the U.S. are strengthening strategic partnership with companies that can offer an integrated management of closed-loop, ranging from extracting metals from used batteries and scraps to production of cathode.

Battery Circular Ecosystem



Human Value Management

LG Energy Solution’s core value emphasizes “people-oriented management.” The company embeds its commitment to respect human rights into policies and procedures, adheres to fundamental human rights and labor principles and standards, and respects national-level labor laws. LG Energy Solution believes that its fundamental competitive edge comes from its people and is committed to promoting diversity and ethics.

Human Rights Management

Human Rights Management Policy

LG Energy Solution, under the corporate management principle, “People-Oriented Management,” fulfills its basic responsibility to uphold human rights and the right for freedom and happiness. To that end, we support human rights and labor-related international standards, including Universal Declaration of Human Rights, Human Rights and Labor Principles of UN Global Compact (UNGC) UN Guiding Principles on Business and Human Rights (UNGPR), and International Labor Organization (ILO) Declaration of Fundamental Principles and Rights at Work, and is in compliance with the laws of the countries we operate in. LG Energy established Global Human Rights and Labor Policy and plans to apply it to across global business sites. We also plan to continuously monitor and mitigate any potential risks regarding human rights. Moreover, we will share the Policy with all the stakeholders that are directly affected by LG Energy Solution’s business activities, including employees, customers and suppliers, and contribute to improving and raising their awareness of the policy.

Global Human Rights & Labor Policy	
Principles	Contents
Respect for Human Dignity	LG Energy Solution respects all employees and strives to create a safe and secure working environment by prohibiting workplace violence, including abusive language, psychological or physical coercion, etc.
Avoidance of Forced Labor	LG Energy Solution prohibits all forms of involuntary labor, including forced labor and restriction of psychological and physical freedom of employees. Original copy of identification, passport, and work permits is not requested upon hiring
Prohibition of Child Labor	LG Energy Solution complies with the local labor laws on minimum age of employment and prohibits the child labor below the age of 16. Employees under the age of 18 will not be permitted to tasks that jeopardize their health or safety, including night shifts and overtime.
Non-Discrimination Policy	LG Energy Solution provides equal opportunities for hiring, promoting, remunerating, and training. We strictly prohibit all forms of discrimination including gender, age, race, religion, disability, marital status, pregnancy, labor union activities, and social status.
Working Hours	LG Energy Solution complies with local laws on working hours (regular/overtime hours, holidays) and shall not force employees to work overtime. Employees are to be paid based on labor laws when working overtime.
Wages and Benefits	All employees are to be paid above minimum wage prescribed by local laws.
Freedom of Association	LG Energy Solution respects the employee’s freedom of association and collective bargaining in accordance with local labor laws. Employees can communicate with management regarding their working conditions without any fear of discrimination or retaliation. Employees will not be disadvantaged for joining, participating, or organizing labor unions.

Implementation of Human Rights Management

Human Rights Impact Assessment

In 2019, LG Energy Solution conducted human rights impact assessment on employees of Ochang Plant in Korea and LGESNJ in China through survey, interview and desk review, drawing recommendations to mitigate human rights risks.

In order to manage human rights issues of subcontractors, Ochang Plant has rolled out the trainings for its employees on subcontractor management (e.g., prohibition of abuse of authority). Furthermore, consultation with the executives and managers of subcontractors takes place on a monthly basis to identify any issue or risk in a timely manner.

Going forward, the impact assessment will be carried out in more business sites and enhanced as part of the ESG strategic framework.

Human Rights Management in Supply Chain

All suppliers of LG Energy Solution are part of the responsible supply chain, and therefore are requested to comply with fundamental principles stipulated in the Code of Conduct for Suppliers, including human rights, terms and conditions of employment and environmental health and safety of workplace. All suppliers should sign the agreement of Code of Conduct for Suppliers when entering into a contract with LG Energy Solution and every year thereafter.

Further, with a view to managing any ESG risks in the battery supply chain, such as child labor issues in Democratic Republic of Congo, LG Energy Solution established a responsible supply chain management policy, including responsible sourcing. The policy outlines a variety of requirements for raw material suppliers. In addition, we are operating a grievance handling system to respond to supply chain issues swiftly. Through the responsible supply chain management policy, we aim to run a sustainable, responsible business by proactively addressing supply chain issues and preemptively eliminating any root cause to supply chain risk.

Grievance Handling Process

In order to minimize grievances that employees may experience, LG Energy Solution has put in place a reporting process on sexual and workplace harassment. The Corporate Culture Team is operating a reporting center on sexual and workplace harassment, engaging in the investigation of the reported case and closure of it. Each business site designates a staff member who can initially consult and direct the person raising grievance to the grievance handling system.

Human Rights Program

Human Rights Education

LG Energy Solution provides the employees with education and training programs on human rights through various platforms, including virtual learning platform. The trainings focus on issue areas such as disability awareness and sexual harassment. It is mandatory for the employees to complete human rights related training courses every year.

Prohibition of Employee Discrimination

LG Energy Solution provides all employees with equal opportunities for employment, promotion, compensation, and training in accordance with the Global Human Rights & Labor Policy. The policy prohibits all types of discrimination against sex, age, race, religion, labor union activities, disabilities, pregnancy, marital status, social status, etc.

In addition, the HR Management Principles & Employment Rules stipulate that talented individual should be employed regardless of race, nationality, gender, religion, disabilities, region of origin, affiliation, etc. We are also recruiting foreigners to improve diversity in staff composition. To this end, we are planning on various programs, such as internships, public contests, and meetings with experts through industry-academia collaboration with high-standing universities adjacent to overseas business sites. With a view to promoting balanced regional growth and creating job opportunities for youth, we are operating programs in non-metropolitan areas to foster talented individuals and connect with recruitment.

Creating Jobs for the Persons with Disabilities

LG Energy Solution is operating Areum Nuri, a subsidiary for workers with disabilities, to create jobs for those with disabilities. By April 2021, we had 116 workers with disabilities affiliated with Areum Nuri work in the areas of cleaning, steam car-washing, serving at cafeteria and cafes, managing parking lots, construction and maintenance, and managing goods inventory at business sites in Ochang, Daejeon and Yeouido. In addition to those affiliated with Areum Nuri, 33 people with disabilities are currently employed.

Work-Life Balance

LG Energy Solution makes continuous efforts to create a corporate culture that ensures a balance between work and life.

We operate “Flextime” system designed to promote flexible working arrangements that fit the needs and type of work for all office workers of the company. We are putting in efforts to eliminate the culture of working long hours, and improve the productivity and “quality of life” of employees.

We also introduced “selective working hour system” that runs on a monthly basis, under which employees can decide on their own working hours, within the statutory 40 hours on average up to 52 hours per week. For working hours exceeding the statutory working hours per month and working hours during holidays, we grant 1.5 hours of compensation per extra 1 hour to allow employees to get refreshed after a long service.

Along with the introduction of Flextime, we developed the Working Hour Management System in the intranet portal to monitor and manage working hours in the intranet. Each staff can input the starting and finishing work time, and off hours in the system so that their working hours can be managed in a systematic manner. In addition, the flexible working hour system is applied when legal working hours need to increase temporarily to serve, for example, periodic plant maintenance, overseas business site expansion, prototype production, etc. In these cases, the settlement period is determined within three months, and a work plan should be established in advance, enabling the employees to work up to 52 hours for a specific week while keep the average 40 working hours for the other weeks.

Human Capital

Employee Fostering Strategy

Fostering Entrepreneurs

In order to foster the best candidates of entrepreneurs, LG Energy Solution has established the entrepreneur criteria and the entrepreneur fostering system that reflects the company’s values and industrial characteristics. We select and nurture the next-term and long-term candidates of the CEO and heads of divisions. By comprehensively analyzing the competency levels of each candidate, including professional experiences, achievements, strengths and weaknesses as an entrepreneur, and leadership capabilities, we are running a comprehensive, yet targeted fostering of experience, exposure and education.

Empowering Leadership

In order to empower leadership necessary in each position at LG Energy Solution, we are building a unique leadership fostering system and a diagnostic process. Leadership courses are comprised of Onboarding course aimed at successful conversion of roles upon assuming the lead role, and the Ongoing course aimed at constant capacity building. In 2021, the Ongoing course has provided the team leads with the information and guide for action necessary to manage performance and organize the team each month through the “Team Leader Playbook” series. In addition, through LG Group’s micro-learning platform, we offer leadership content for any staff’s self-learning. The Group’s educational course by rank—MVP course—supports fostering of leadership required in each rank.

Job Competency Building

In order to build job competency of staff, we are operating the LGES Battery Academy (LBA), which consists of professional job competency building programs throughout all sectors, including production/technology, quality, R&D, purchasing/SCM, sales/PM, and DX (a total of 126 programs). The LBA is available for overseas business sites in China, Poland, the U.S., as well as domestic business sites. In preparation for the business expansion, we established in July 2021 the LG-IBT (Institute of Battery Technology) for early integration of the competency of new talents. This will become a hub fostering the key talents from domestic engineers and overseas business sites to those with technological leadership by expanding and reinforcing the existing LBA. Furthermore, we will define the six core capabilities needed for all staff to improve their job competency, and provide educational programs to facilitate the exchange of know-how.

Global Capacity Building

As we expand our business globally, we are offering systematic fostering programs for dispatched personnel to exercise their competency early on and maximize business performance. By categorizing the competency expected of dispatched personnel into global job competency (expertise, adaptive capacity to local culture, and foreign language proficiency), and leadership competency (creating outcome, organizing & fostering talents, and spreading corporate culture), we are operating courses before (preliminary education), during (capacity building), and after (adaptation after return, internalizing local experience) dispatching, with a focus on key competencies required in each phase. In order to build global capacity of local staff in overseas corporations, we have additionally introduced the program called “Working with Korean, Working Globally” to the onboarding course for the new employees. To improve foreign language proficiency of all members, we are constantly offering online language courses for 35 languages, including English, Chinese, Polish, and Korean (for overseas workers), in addition to the AI English speaking course.

Energy Management of Members

LG Energy Solution operates a psychological counseling center to manage mental health and energy of employees and create an immersive environment, so that our employees can address in a more effective manner various emotional issues arising from work and home. LG Energy Solution will continue to take care of the mental health and wellbeing of members and prevent their energy from running out and lead innovations in the way we work to improve productivity through qualitative growth.

Early Adaptation and Immersion of New Employees

At LG Energy Solution, we are operating educational programs at the Group and corporate level with an aim to help employees to grow a sense of affiliation and pride in the company, understand the business and customers, and adapt to the work environment. To help new employees to adapt faster, we offer a Welcome Kit and Day 1 program. Due to limitations in holding in-person programs, since 2020, we have conducted virtual courses. By reflecting the characteristics of the MZ generation, we have applied metaverse and gamification to the new employee education supporting them to learn about the basic overview of the company, set up of workplace environment and products/production process.

Talent Fostering Based on Diversity

LG Energy Solution is recruiting talented people from not only Korea but also countries all over the world, including China, the U.S., and Poland. Recently, an increasing number of countries, particularly in Europe and North America, have placed an emphasis on diversity and with this in mind, we are improving the HR policy to manage and promote diversity from global perspective. We will start with conducting a survey of employees on their awareness of various elements, such as nationality, race, gender, and generation, and then identify key areas and indicators based on the level of awareness of diversity in the respective country.

Advanced EH&S

LG Energy Solution established a systematic EH&S management system based on ISO14001 and ISO45001, and carries out various related activities.

With stronger 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. Keeping up with global trends, we are establishing in-house product management regulation and a preliminary eco-friendliness review system with the aim of securing 100% eco-friendliness in materials and products by 2023. To provide eco-friendly products and services to customers, we set a vision of 'Eco-Product Solution Partner' and established Chemical Assurance and Regulation Management system (CHARMs 2.0) that encompasses the entire process from raw material purchase to final product sales.

Product Stewardship

Building a Product Stewardship System

LG Energy Solution is committed to providing customers with eco-friendly, competitive materials and solutions and contributing to a sustainable future for customers, and thereby creating more customer value. To that end, we have set Eco-Product Solution Partner as our vision, carrying out a variety of activities to provide solutions that are effective and valuable in terms of environment and economy throughout the entire product lifecycle ranging from R&D to disposal.

Strengthening Product Stewardship

LG Energy Solution aims to secure 100% eco-friendliness in products by 2023 as a key task of ESG strategy. The purpose of securing eco-friendliness in products is to prevent production and sales losses as a result of non-compliance with regulations and customer requirements by reviewing in advance the eco-friendliness of raw materials and products according to product life cycle.

Monitoring Environmental Regulatory Trends and Establishing Product Stewardship Process

LG Energy Solution examines and monitors environmental laws, regulations, specifications, Voice of Customer (VOC) and accident cases related to our products to determine the direction and level of eco-friendly product design. In particular, we monitor Korean Act on Registration; Evaluation, Etc. of Chemicals; Chemical Substances Control Act; Occupational Safety and Health Act; EU REACH¹⁾; SVHC²⁾; RoHS³⁾; SCIP⁴⁾; US TSCA; CA Proposition 65⁵⁾; Chinese Chemical Regulation; Conflict Minerals Policy, etc. We have established a database for chemicals used by the company and those regulated at home and abroad in order to prevent any violation of global regulations. We also take preemptive measures to reduce risks related to chemical regulations in global business.

The purchasing department and environmental safety department communicate periodically with suppliers regarding the eco-friendliness management of materials, and the quality department and CS team communicate with clients to guarantee the compliance with chemical regulations required by the relevant country and clients.

Detailed classification of harmful substances in Eco-SCM guidelines		
Level 1 (banned substances)	Level 2 (banned substances)	Level 3 (reduced substances)
<p>Substances that are considered harmful to the human body and the environment, which are currently prohibited by law at local and national levels, are prohibited from intentional use on all items traded with LG Energy Solution.</p>		
<p>Environmentally harmful substances designated by the RoHS Directive, which are prohibited from use if the content exceeds the maximum allowable concentration of each material determined by LG Energy Solution.</p>	<p>Environmentally harmful substances regulated by national legislation or international agreements other than RoHS Directives, which are prohibited from use if the content exceeds the maximum allowable concentration of each material determined by LG Energy Solution.</p>	<p>Substances suspected to be harmful to the human body and the environment, which are not prohibited at this point, but are planned to be phased out from use in the future.</p>

1) REACH (Registration, Evaluation, Authorization & restriction of Chemicals): European law on registration, evaluation, authorization and restriction of chemicals
 2) SVHC (Substances of Very High Concern): substances of very high concern, defined by EU REACH
 3) CA Prop 65: California’s Safe Drinking Water and Toxic Enforcement Act
 4) RoHS: Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS)
 5) SCIP (Substance of Concern In Products): A policy that requires a company that launches a completed goods containing SVHC to submit declaration in advance, following a revision to EU WFD (Waste Framework Directive)
 6) CHARMS: Chemical Assurance and Regulation Management system

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/warehousing to use, shipping and disposal. We are strictly managing environmental hazards from the raw material stage according to the “Eco-SCM.”

We block all potential risk in advance using CHARMs 2.0 by acquiring chemical component information and compliance assurance from suppliers and reviewing harmfulness and legal response information before ordering raw materials. Such raw material information is combined with Bill of Material (BOM) information and regulation information of products. We are utilizing CHARMs 2.0 as a platform to identify eco-friendliness of our products and issue sustainable product certificate.

In addition, we are sharing the information required with quality management staff by providing up-to-date information on global product eco-friendliness, safety, and harmful chemicals regulations. In particular, we post legal regulations by nation and mandatory items to be observed in order to prevent violations of the law during business. In 2021, by improving the chemicals process and applying CHARMs 2.0 throughout the production bases in China, we will further strengthen the foundation for applying CHARMs 2.0 to all overseas business sites.

Building Capacity of Employees and Suppliers

LG Energy Solution provides training so that employees are aware of the importance of product stewardship and carry out their environmental and social responsibility to the fullest in business activities, in accordance with relevant regulations. We provide working-level staff of the relevant departments, including procurement, development, and quality, with a variety of training programs, and respond effectively to requirements of countries and customers. Training programs include global trends of product-related environmental regulations, registration process of chemical substances of EU REACH and Act on the Registration, Evaluation, Etc. of Chemicals, preparation and management of Material Safety Data Sheets (MSDS).

To facilitate the compliance of suppliers with the relevant chemicals regulations, we organize an eco-friendly partnership conference every year. In 2020, it was held virtually due to the impacts of COVID-19. In this conference, We shared the information on domestic chemicals laws, the need for suppliers to respond to the Act on Registration, Evaluation, Etc. of Chemicals and Occupational Safety and Health Act, FAQs on chemical integrated management system, and support activities for energy accompanying businesses. LG Energy Solution will continue to communicate with suppliers so that they can properly respond to global chemical regulations.

Securing Product Stability

LG Energy Solution takes safety and quality as a top priority for all decision-making, develops fire prevention technology to make safe batteries that can withstand any danger, and applies such technology to batteries to build high-intensity comprehensive safety measures against fire.

Special Fire-Extinguishing System

LG Energy Solution applies a special fire-extinguishing system that directly injects water into the grid module. The fire-extinguishing system LG Energy Solution developed for improved safety directly injects water into the battery module to put out fire when fire is detected from the smoke detector installed on top of the battery rack in the ESS system. This allows immediate response of the battery cell at an early hour of fire occurrence, thereby putting out fire quickly and preventing further spread.

This fire-extinguishing system, having recently passing the UL9540A Unit level test for ESS thermal runaway fire transfer by UL (Under Writers Laboratories), a global safety certification company, acquired a New Excellent Technology (NET) certificate from Korean Agency for Technology and Standards, is recognized as the most effective way to put out lithium-ion battery fires.

Establishment and Implementation of Comprehensive Fire Prevention Safety Measures

LG Energy Solution secures battery safety by adopting triple safety devices, such as module fuses, rack fuses, and surge protectors, to protect the battery from external shock from the initial phase of battery design. In addition, the ground-fault detection device monitors insulation state of the battery in real-time and blocks battery power in case of abnormality to prevent fire.

Moreover, LG Energy Solution is continuously strengthening safety measures through periodic battery software updates and monitoring of installation sites.

Product Labeling

LG Energy Solution labels products with a barcode that contains production area, production date, and model information. Such labels not only improve production management efficiency, but also facilitate tracking and management of which cells, modules and packs have been used in a particular vehicle. Along with labeling to provide product information, we also strictly comply with internationally required labeling regulations. For instance, we acquired UN 38.3 certification, air shipping standard for batteries, and GB/T certification, a Chinese battery safety testing standard that are marked on battery cells and models as barcode.

EH&S Policy

ISO 14001 certified business sites
Ochang, Daejeon, LGESNJ,
LGESNA, LGESNB, LGESWA,
LGESMI

ISO 45001 certified business sites
Ochang, Daejeon, LGESNJ,
LGESNA, LGESNB, LGESWA

Environment, Health, and Safety System

LG Energy solution has established a systematic EH&S management system based on ISO 14001 (environment management system), and ISO 45001 (safety and health management system). 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 engage in on-site management activities, with each organization conducting its unique activities to prevent accidents. When an environment or a safety accident occurs, it is managed systematically and employees are evaluated based on the severity of the accident to apply practical preventive measures.

EH&S Policy

LG Energy Solution acknowledges that environment, health, and safety are the fundamental elements for securing competitive edge, and will faithfully practice the following principles for the continuous improvement of EH&S performance based on clear goals and bold actions.

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 industry at home and abroad.
- We pursue continuous 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.

CEO Kim Jong-hyun



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 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 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 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 case from a business site through EH&S internal consultation channels, team leads' meetings, and workshops.

Activities to Prevent Critical Disaster

The EH&S management in business sites is gaining more importance than ever. With the growing demand to impose heavy criminal and administrative liability on companies, serious workplace accidents and man-made disasters could result in not only undermined reputation but also significant financial losses. In this regard, in-depth discussions on industrial safety and health, including the development of international standards for EH&S management systems and the enactment of the Serious Accidents Punishment Act are continuously taking place at home and abroad. As a global company, LG Energy Solution strives to embed a high-quality EH&S management system.

For example, a TFT was set up to eradicate serious fatal accidents, carry out intensive inspection of the the serious accidents occurring production process (May–June), list the hazards discovered in the inspection, and continuously monitor their improvement. We will continue to make efforts to ensure zero serious accidents and man-made disasters by establishing safety facilities/systems (e.g., hazardous areas/facility blocking devices) to prevent and mitigate potential risks and by establishing a corporate culture of complying with EH&S regulations.

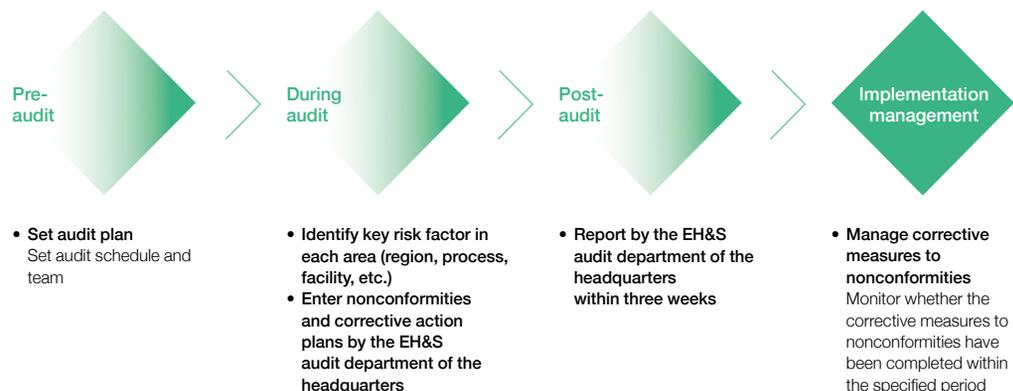
EH&S Audit and Technical Service

The EH&S audit system at LG Energy Solution is subdivided into periodic audit, planned audit, and special audit. audit encompasses the EH&S management system, process safety, facility and workplace safety, firefighting, dangerous articles, and environmental impact assessment, and is conducted on business sites once every three years. The planned audit focuses on selected topics, such as safety audit on suppliers, facility safety management, emergency response system, and fulfillment inspection, and is conducted once a year. The special audit is conducted on business sites where serious accidents have occurred, or there is a likelihood of such, to prevent them.

In 2020, LG Energy Solution carried out 22 EH&S audits, including 8 periodic audits, 3 planned audits, and 11 special audits. We also conduct EH&S audits before operation at new establishments and extensions and continuous emergency response audits and training for early settlement of emergency response systems.

Types and Process of EH&S Audit

Periodic Audit	<p>Regular audit of EH&S weaknesses throughout all business sites</p> <ul style="list-style-type: none"> • Target: Domestic business sites and overseas production sites (once every three years at each site) • Area: Environmental safety leadership, planning, support, operation, performance, improvement, etc.
Planned Audit	<p>Audit carried out on the selected theme each year for managing EH&S issue</p> <ul style="list-style-type: none"> • Target: Domestic business sites and overseas production sites (once a year at each site) • Area: Safety audit of suppliers, facility safety management, emergency response system, etc.
Special Audit	<p>Audit carried out at business sites where serious accident has occurred to prevent from recurrence</p> <ul style="list-style-type: none"> • Target: Business sites where serious accident or man-made disaster has occurred or there is a likelihood of such • Area: Cause of serious accident, process with possibility of recurrence, etc.



Zero Waste to Landfill

LG Energy Solution is proactively recycling wastes discarded from business sites to achieve zero waste to landfill. In the case of LGESMI in the U.S., it has recycled more than 90% of the waste discharged from business site and acquired the Landfill Zero certification from the NSF International, a global EH&S certification company, in 2018.

LG Energy Solution aims to acquire zero waste to landfill certification at all business sites to minimize the impact of waste disposal on the ecosystem.

Health & Safety Program

Strengthening EH&S Competence

Each business site of LG Energy Solution establishes and operates an annual education and training plan for working-level staff of EH&S-related departments to secure the safety of employees and improve the level of EH&S management.

Diversifying the programs by rank and duty	Education targeting all business sites and employees	Education targeting new employees and employees with change of duty	Education targeting special task workers	Education targeting suppliers
Elementary / Basic / Professional course	Education to empower EH&S mindset among employees	Education on EH&S precautions before starting service	Specialized education for employees at high-risk workplaces	Education to empower EH&S management of suppliers
1	2	3	4	5

Improving EH&S Management Competence Through Performance Sharing Meetings

LG Energy Solution hosts annual performance sharing meetings at domestic and overseas business sites to share the activities conducted to prevent EH&S accidents so that employees can enhance their work competence. The 2020 EH&S Performance Sharing Meeting was held virtually due to the impacts of COVID-19. The outcome of the meeting, including the selected exemplary theme of EH&S management, was video-recorded to share across global business sites.

The performance sharing meeting presented best practices of new EH&S technologies, exemplary cases of proactive health management, and suppliers that implemented an excellent EH&S management system. Also shared at the meeting are field-driven themes and poster sessions of each business site introducing major activities. These meetings contribute to the settlement of the EH&S-first culture by enhancing our pride in EH&S duties and offering a benchmarking opportunity among business sites.

Reinforcing the Health Management of Employees

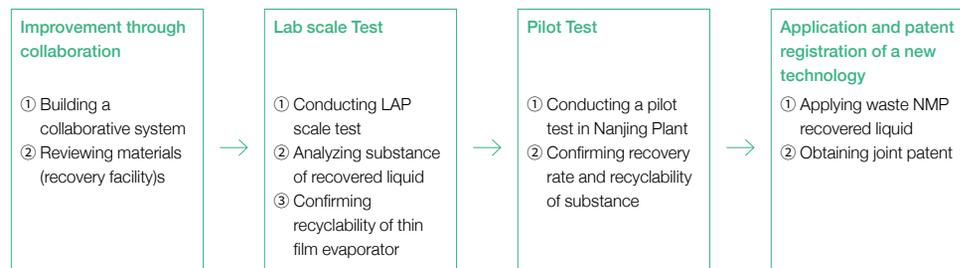
LG Energy Solution measures the harmful factors in the work environment through an external agency every year to remove any health hazards at business sites. We try to ensure that all employees can work in a pleasant environment by establishing in-house standards that are stricter than the legal standards, conducting activities to prevent musculoskeletal diseases, and inspecting local ventilation systems.

In addition, LG Energy Solution is operating a health care office at each business site to provide personalized medical services to employees. We provide personal health counseling and information by implementing a general health checkup on employees older than 35 years and those who have worked for five years or longer. Each business site has a variety of health promotion programs to minimize the latent health risks of employees and create a sound health management culture. A process is in place to provide employees with physical and psychological health care by undertaking periodic occupational stress evaluation and management and connecting high-risk group with in-house psychotherapist and/or professional hospitals.

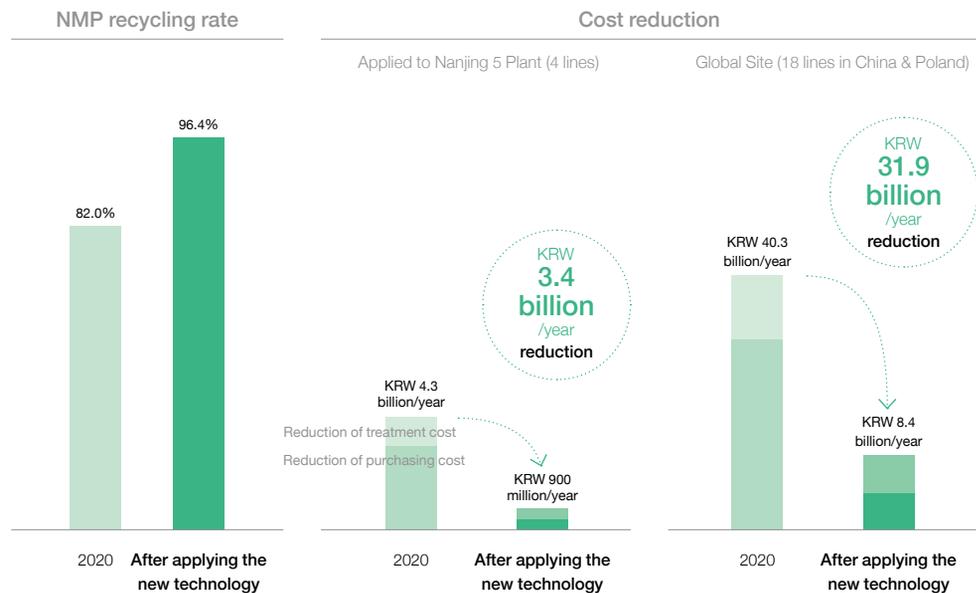
Exemplary Case 1. Increased Recycling Rate of NMP (N-Methyl-2-pyrrolidone) by Applying New Environmental Technology (Nanjing, China)

With continuous extensions, following business growth, Nanjing Plant saw continuous increase in the amount of hazardous wastes. Among them, NMP solvent waste accounted for about 85% of the total. Developing a new technology for recycling NMP has been thus important to reduce the risk of waste transport and consignment costs. To develop the technology, we established a cooperation system for technological convergence with Daejeon Institute of Technology, TFT of Separation Refining Technology, and Company M and verified the potential of introducing thin film evaporator technology through undergoing numerous experiments. Through additional experiments, the effectiveness of thin film evaporation technology for NMP recycling was verified and the final patent was registered. If applied to other processes in addition to Nanjing Plant, we can save additional costs for hazardous waste discharge and disposal consignment.

Development Process



Quantitative Performance



Qualitative Performance

- Jointly promoted patent registration with the holder of design technology to reduce development costs, and promoted early commercialization of the patent technology and secured intellectual property right
- Improved efficiency of process operation and reduced hazardous waste disposal

COVID-19 Responses



Supports to overseas corporations
341,750 masks, 17,072 hand sanitizers,
600 thermometers supported



The prolonged COVID-19 is having a huge impact on the economy, society, and personal life worldwide. To overcome such challenges and crisis, LG Energy Solution is continuously providing various means of support to employees, suppliers and local communities.

Strengthening Health Management in Domestic and Overseas Business Sites

LG Energy Solution puts employees' safety first and strengthens the health management of domestic and overseas business sites while taking safety measures of employees and suppliers in accordance with guidelines of the respective national health authority.

In order to prevent infection and spread among employees, the Global Environmental Safety Department under the Chief Risk Management Officer (CRO) regularly publishes preemptive quarantine guidelines on company bulletin boards, recommends to follow them, and communicates in a transparent and timely manner countermeasures and status of spread in case of in-house confirmed cases.

To prevent the inflow of viruses and manage health at domestic and overseas business sites, all employees are required to wear masks, and AI thermal imaging CCTV is in operation at the entrance of each office to monitor any fever cases.

We also conduct daily quarantine of common areas such as conference rooms and commuting buses and thoroughly follow the social distancing guidelines when using the cafeteria and smoking zones on the premises. Partitions are installed at the cafeteria to minimize contact between employees; employees can even order and pick up lunch boxes through mobile applications.

In order to ensure a safe working environment for employees, we continuously secure essential items such as masks, thermometers, and disinfectants, as well as support for COVID-19 PCR (Polymerase Chain Reaction) tests and vaccination leave. Anyone willing to be checked can test on the premises using the COVID-19 self-diagnosis kit at any time.

In particular, overseas employees who have difficulty accessing quarantine supplies are also provided with personal hygiene products such as masks, hand sanitizers, and thermometers to create an environment where all employees can work safely.

Creating Non-Face-to-Face Business Culture

In order to prevent the spread of infectious diseases by minimizing employees' face-to-face contact, LG Energy Solution has prepared various policies to minimize infectious diseases by introducing telecommuting, adjusting commuting hours, and operating Smart Working Centers in various sites including the headquarters, Gwacheon and Magok R&D campuses.

We provide various tools to facilitate remote working such as WebX video conference system and Microsoft Teams. We create an environment where our suppliers, as well as LG Energy Solution, can be to be immersed in work and increase productivity.

Strengthening Supports to Suppliers and Community

In order to support suppliers that are suffering from prolonged COVID-19, LG Energy Solution and LG Group affiliates provided a fund amounted to KRW 1.25 trillion in February 2021. We also help them secure funds at low interest rates through funds linked to Shared Growth Programs.

With the surge in confirmed cases, the hospital beds are running low for milder cases. To deal with this issue, we have offered LG Academy (Inhwawon) as residential treatment center since 2020. Further, we are conducting various activities to help the local medical system to recover by holding a blood donation campaign in collaboration with local governments.

In addition, with the aim of revitalizing local economy, Ochang Plant is striving to fulfill its social responsibility by conducting a "Companion Plant Movement" to support local flower farms.

Responsible & Impactful Business

Responsible supply chain management is crucial to sustainable management of LG Energy Solution. The fast growth of the battery market has brought various issues related with the supply of raw materials to the forefront, and the ethical and transparent management of supply chains has now become a basic requirement of business strategy. By establishing the responsible sourcing policy, we verify the adequacy of the supply chain management system from the new supplier selection process, and preemptively analyze and manage supply chain issues through regular ESG evaluation and risk improvement inspection. LG Energy Solution will become a company that provides sustainable values to all value chains and grows together with local community by managing responsible supply chains that value human rights and the environment.

Responsible Supply Chain Management

Supply Chain Policy

Code of Conduct and Risk prevention process

Since 2016, LG Energy Solution has enacted the Code of Conduct for Suppliers. Code of Conduct for Suppliers consists of the regulations and global standards that our suppliers have to comply with in terms of human rights, labor, business ethics, health, safety, environmental sustainability, responsible sourcing of minerals and grievance handling system, aimed at operating a sustainable supply chain. Based on the Code of Conduct for Suppliers, we verify the adequacy of the supply chain management system in advance from the new supplier selection process. We've been systemically managing supply chain risks through regular sustainability management evaluation and monitoring of each supplier's follow-up measures. All suppliers in transactional relationship with LG Energy Solution are obligated to adhere to the Code of Conduct for Suppliers, and the relevant procedures and records are managed by the purchasing portal system.

In addition to operating the Code of Conduct for Suppliers, LG Energy Solution is making efforts to establish a risk prevention process to find a variety of risk factors in the supply chain in advance. In particular, in order to increase transparency of the cobalt supply chain, LG Energy Solution has incorporated a "blockchain-based platform," which makes manipulation of data or hacking almost impossible through dispersed data storage. In 2020, LG Energy Solution built a system that automatically links raw materials warehoused and data for each production/shipping process to the blockchain platform. In future, we plan to expand the target sites for blockchain platform application and raw materials supply chain in order to minimize various risks from raw materials production.

Operation of Responsible Sourcing Policy

LG Energy Solution goes beyond the Code of Conduct for Suppliers and established a policy for more responsible sourcing of raw materials. Base on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, the policy states the basic principles to the management of supply chain for LG Energy Solution and suppliers to minimize the supply chain risks, such as violation of human rights and environmental pollution. Through regular assessment of the supply chain, LG Energy Solution inspects the safety, environment, and compliance management system of suppliers. Based on the assessment result, we conduct an additional due diligence and manage progress of improvement task as needed. We require our suppliers to establish their own framework for securing supply chain transparency, identifying risks and conducting third-party supply chain due diligence so that they can avoid purchasing raw materials from conflict-affected and high-risk areas. Also, we are asking our suppliers to communicate aforementioned supply chain management activities with LG Energy Solution and external stakeholders. The results are to be communicated to LG Energy Solution and external stakeholders.

In addition to the above requirements, LG Energy Solution is running a grievance mechanism, accessible by external stakeholders at any time to ensure prompt response to issues or inquiries regarding the supply chain. Through the responsible sourcing policy, we will run a sustainable, responsible business by systematically resolving supply chain issues and proactively contributing to the fundamental reduction of supply chain risk.

Assessment of Supply Chain Risk

ESG Assessment of Supply Chain

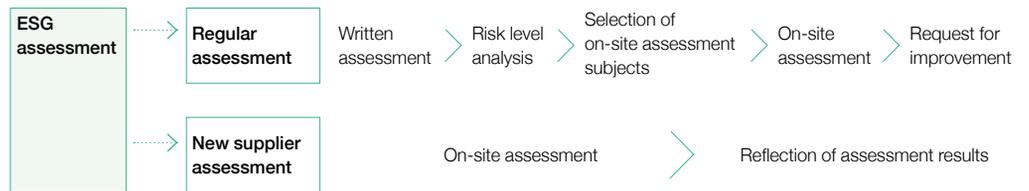
Since the child labor issue in the cobalt supply chain has been raised by the international human rights advocate Amnesty International in 2016, the voice to manage ESG in the supply chain of the battery industry has been elevated. Accordingly, we have been operating the supply chain management system by establishing the system in accordance with the standards of UN, OECD, RBA (Responsible Business Alliance), etc. We are also communicating closely with major stakeholders such as suppliers, clients, and investors.

LG Energy Solution's ESG Management Process in Supply Chain

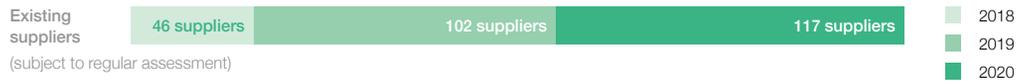


LG Energy Solution assesses suppliers every year to check whether they comply with the Code of Conduct for Suppliers. Improvement tasks and implementation results are monitored in conjunction with on-site inspections. ESG assessment for suppliers is conducted in connection with the purchase assessment (new supplier registration and regular assessment), which accounts 20% of all assessments. New supplier registration assessment consists of 10 evaluation items in the ESG fields that are reflected to the supplier assessment. Regular assessment is performed on raw material/facility suppliers at home and abroad. There are 63 assessment items including the prohibition of child labor, protection of workers, compliance with working hours, management of conflict minerals, management of safety, health, and environment approvals, and risk prevention.

Supplier ESG Assessment Process

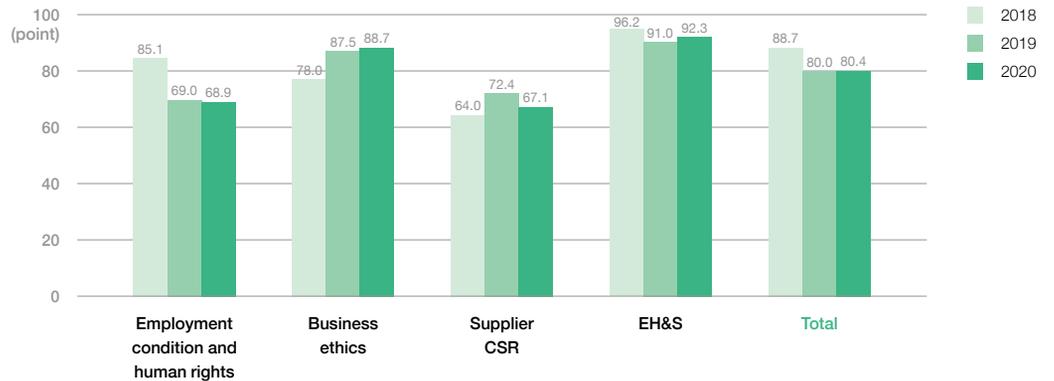


Tendency of ESG assessment subjects



In 2020, 117 global raw material suppliers have been evaluated through the ESG Self Assessment Questionnaire (SAQ). As a result of the assessment, the overall scores were temporarily decreased due to the revision of SAQ on environment working condition, human rights and EH&S in 2019. However, the overall score has been showing a similar tendencies in past three years.

It was identified that suppliers needed to improve some CSR fields including compliance with legal working hours, management of conflict minerals, and management of safety, health, and environment approvals.



We are conducting on-site inspection for suppliers in the high-risk group in order to check their major non-compliances and identify improvement tasks. The on-site inspection was carried out in 10 suppliers in 2018 and 2019, respectively. In 2020, due to the COVID-19 pandemic, the on-site inspection was replaced by an ESG operational guide, which was distributed for all suppliers.

Risk Group Status

By year	High Risk		Mid Risk		Low Risk	
	Number of suppliers	Proportion	Number of suppliers	Proportion	Number of suppliers	Proportion
2018	1	2.2%	10	21.7%	35	76.1%
2019	10	9.8%	55	53.9%	37	36.3%
2020	11	9.4%	61	52.1%	45	38.5%

- Low Risk (85 or above)
- Mid Risk (65 or above, below 85)
- High Risk (below 65)

LG Energy Solution has been strengthening the supplier's compliance obligation by including the ESG compliance when concluding the purchase contract. We encourage energy transition to renewable energy while upgrading the level of advancing on ESG assessment system and spreading ESG management within entire supply chain by expanding the assessment subjects. We are committed to strengthen ESG monitoring supports to the supply chain to secure 90% or higher ratio of low-risk group by 2030.

Inspection on Raw Material Supply Chain

Since international human rights advocate Amnesty International raised the issue of child labor in the cobalt supply chain in 2016, LG Energy Solution has been making efforts to realize a responsible supply chain in many different ways. In 2017, we have completed a third-party due diligence on Chinese refining and precursor supplier Huayou Cobalt. In 2018, we have inspected the child labor status through direct due diligence in small mines in Democratic Republic of the Congo and transparently shared the results in LG Chem website. In 2019, we registered as a member of the Responsible Minerals Initiative (RMI) under the Responsible Business Alliance (RBA) in the name of LG Chem. In addition to joining the initiative, we are providing support for international efforts to reduce risk in the supply chain.

LG Energy Solution has been collaborating with various clients to conduct a third-party due diligence on cobalt supply chain every year. In 2020, we have carried out an exhaustive assessment on major cobalt supply chains to identify areas that need to be improved for each supplier and has been following up their implementation. In order to increase sustainability in battery business, LG Energy Solution will put the highest emphasis on sourcing from responsible supply chain. We will expand the verification and improvement procedures for supply chains of major raw materials, such as lithium, nickel and natural graphite, based on our rich experience in due diligence of cobalt supply chains and management system for responsible supply chain.



Cobalt Mining Site and Refinery



Conflict Minerals Management

Supply Chain Management Related to Conflict Minerals

Conflict minerals refer to four minerals—tin, tantalum, tungsten, and gold—mined in the Democratic Republic of the Congo and neighboring nations. LG Energy Solution has established policies to prevent environmental pollution, casualties, and labor exploitation in troubled areas and have been excluding conflict minerals from raw material procurement. As part of our efforts to eliminate the use of conflict minerals, we conduct surveys on our suppliers using four minerals to identify whether they use any conflict minerals and to collect and manage information regarding relevant refineries. By using an IT system, we are monitoring suppliers as well as the components of raw materials from the procurement stage. Furthermore, we prohibit the use of conflict minerals in principle as stated under our Eco-SCM Guideline distributed to suppliers.

Community Impact

CSR Strategy and Direction

Social contribution is an important part of ESG that coexists with the community and can communicate with stakeholders regarding social and environmental issues. LG Energy Solution is focusing on “Environment” from a mid- to long-term perspective in line with the business vision toward green battery ecosystem.

Green+ing : A portmanteau of “Green,” a color symbolizing eco-friendliness, and “-ing,” a suffix that indicates that our active commitment to eco-friendly social contribution is an ongoing effort.

To You(2U) : “U” expresses the “Universe” that encompasses all the environments, society and people, and also indicates homonym “You.”

Theme Environment	We pursue green battery ecosystem, based on Corporate Social Responsibility.
Vision Together Energy, Sharing Solution	In order to resolve the social issues we face, we will gather energy and provide solutions to create a better future to open up a better future.
Brand Greening2U	We will continuously carry out eco-friendly CSR activities for the environment, society and future generation.

The CSR direction of LG Energy Solution was selected “Environment” as based theme that could be aligned with business direction. Through a survey of employees, sincere and touching socially contributed activities were selected as operation theme.

CSR Program

Hope Green Power Plant (Cheongju)

Through the Hope Green Power Plant Project, LG Energy Solution is producing renewable electricity using photovoltaic systems and donating the profits to the underprivileged and adolescents from low-income families. It was a project carried out under a partnership with a local government and NGO in December 2020 when a 410 kW solar power generation facility was installed at Cheongju Northern Transfer Center.

The estimated welfare funds to be raised over the next 20 years are around KRW 800 million, and the estimated reduction in GHG emissions is 4,900 tons (244 tons annually). Welfare projects for vulnerable people in Chungcheongbuk-do province will continue through an operating committee involving companies, public institutions, environmental groups, and residents’ autonomy committee.



CSR Performance

Ochang Plant

- “Companion Plant Movement” to help flower farms

To help local flower farms that have been hit by reduced flower consumption since the outbreak of COVID-19, Ochang Plant held the “Companion Plant Movement” to purchase potted plants with voluntary participation of employees. The plants purchased during this activity are 15 potted plants that have excellent indoor air purification capabilities. About 520 employees participated to purchase more than 1,700 plants from the region. This CSR activity was planned in the hope of achieving not only emotional stability but also relaxation of mind by looking after a companion plant at times when people’s body and mind are getting tired due to social distancing.



U.S. Corporation

- Operating girl scouts short-term vocational training course

LG Energy Solution U.S. Corporation is working with the Michigan branch of Girl Scouts in the US to promote a short-term vocational training program (1-week course). The program provides industry-wide knowledge and employment information through simulation of battery cell manufacturing, and interviews with female engineers in transportation, such as airplanes, trains and automobiles. LG Energy Solution US Corporation will work with other Girl Scouts branches to provide more opportunities for female students in the future.

Nanjing Corporation

- Youth health & education projects and environment protection activities

Established in 2003, LG Energy Solution Nanjing Corporation has been carrying out youth health and education projects. Since setting up a joint fund with Jiangsu’s Women’s Welfare Fund in 2019, the corporation supported more than 100 teenagers from low-income families over the past two years. In addition, regular visit of low-income families and child-care institutions in Nanjing is made with Nanjing-Korea Investment Business Association. Since May 2019, the corporation has been donating computers, books and stationery and conducting science classes in elementary schools in Nanjing. From 2020, it is promoting low-carbon lifestyle and purifying representative tourist attractions in Nanjing to improve community awareness of environmental protection

Poland Corporation

- Daily necessities support

One of Poland's most well-known social contribution projects, "Noble Package," is an activity based on the collaboration of volunteers and donors, where volunteers find families in need and donors prepare and deliver the necessary supplies to those families.

Employees of LG Energy Solution Poland Corporation have been providing supplies to selected families since 2019. Starting with 30 packages delivered to a family in 2019, in 2020, the corporation supported packages of 106 daily necessities and home appliances to four families. It is planning to continue this campaign in 2021 as well.

Daejeon R&D Campus

- Talent development support

Daejeon R&D Campus is working with Child Fund Korea to support dreams (talents) of children with social and economic difficulties to resolve inequality in educational opportunities and strengthen children's capabilities to grow as healthy social people. In 2020, it supported tuition fees to develop the dreams (talents) of six middle/high school students, and plans to continue this campaign in 2021.

- Do! Dream! Child Center

Daejeon R&D Campus is promoting projects to support the renovation of local children's centers and improve the environment of children's cohabitation families. In 2021, new children's centers with insufficient facilities were additionally selected to promote environmental improvement projects. We are trying to improve the environment of local children's centers this year so that child care can be carried out in a good environment and the satisfaction and happiness of children's lives are enhanced.

Shared Growth

Policies & Strategies Toward Shared Growth

LG Energy Solution adopted a policy of shared growth that creates a fair-trading culture and supports long-term, practical growth of our business partners.

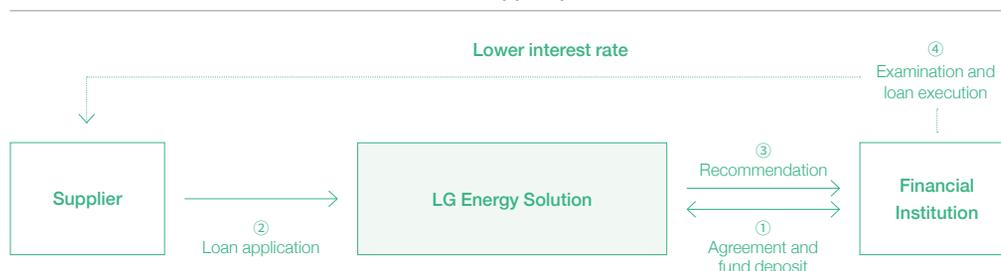
Through this policy toward shared growth, we are putting forth more effort to establish a sustainable shared growth system by strengthening business ties and increase competitiveness of business partners based on various supports.

The ESG team at the headquarters and the purchasing organization are responsible for shared growth to conduct ESG risk management and assessment of business partners, planning and operating company-wide supportive programs, providing technical supports, and holding analysis briefing sessions with business partners, centered on our R&D/production/technological department to seek accompanied growth and capability building for of business partners.

Financial Support

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,” which is our representative loan fund with low interest rates, focuses on supporting facility investments and funds for operational expenses that can be of great burden to the business partners. Furthermore, we are investing contributions in the fields of R&D, HR development, productivity improvement, advancement to overseas market, and energy saving for suppliers by donating win-win cooperation funds as financing for shared growth.

Financial support process



Shared Growth Program and Achievements

Supplier Competence Improvement Activity

- Educational Support for Employees of Suppliers

LG Energy Solution offers free online courses on business, IT, language/culture, liberal arts, and leadership through LG Academy, an educational institution designated by the Ministry of Employment and Labor, for the employees of suppliers. We are expanding the educational budget for the improved training program, including workplace sexual harassment prevention education which is the mandatory legal education as well as up-to-date educations, and we will carry out PR campaigns so that more employees can partake in educational courses.

- Rank-up Activity

We discover the weak points of suppliers through the inspection of development/mass production systems and processes and find detailed measures for improving their ability to solve issues. By carrying out activities to improve the weak points, we help our suppliers to increase productivity and reduce waste, thereby enabling them to meet the global requirements.

Supplier Communication Activity

LG Energy Solution regularly shares business status and issues and listens to the voices of suppliers. In February 2021, we held an online e-conference for shared growth with around 100 business partners all over the world as a channel for exchanging ideas to improve business competitiveness in terms of quality, ESG and more. This year, we had an in-depth discussion on concrete measures to improve procedural/facility technologies and shift our focus toward customer value-orientedness to raise global quality standard in an innovative way. We will continuously try to establish a healthy cooperative culture through exchange with our suppliers.



Good Governance

In a situation where the needs of various stakeholders surrounding the company are converging to ESG, LG Energy Solution launched the ESG Committee in the first half of 2021. In addition, in order to preemptively respond to risks from changing global battery regulations, we will constantly monitor the policy trends and strengthen cooperation with battery-related associations in each country as well as climate-related initiatives in preparation to the enactment of new policies so that LG Energy Solution's voice can be heard.

Operation of ESG Decision-Making System

ESG Committee

In order to deal with ESG issues that are gaining importance internally and externally based on climate change, human rights, supply chain management and governance, LG Energy Solution established the ESG management strategy system and formed the ESG Committee in June 2021.

The ESG Committee consists of four non-executive directors and one executive director.



The ESG Committee meeting will be held at least once a half year and will assume the roles of deliberation and resolution of basic policies, strategies and operation of ESG management.

Major Matters for Resolution at ESG Committee

- Mid- to long-term ESG strategy and roadmap
- Major goals and activities linked to mid- to long-term ESG strategy
- Matters considered as risks and management/response thereof
- ESG evaluation response and external announcement

ESG Committee supports LG Energy Solution to fulfill the responsibilities and roles to the environment and society, and establish a transparent governance to achieve sustainable growth on the long term.

The ESG team under the General Affairs of Foreign Cooperation serves as the secretariat of the ESG Committee, establishes mid- to long-term ESG objectives and management indicators, and performs practical roles, such as performance management and ESG-related external communication.

Message of Chairperson Shinn Mee-nam of ESG Committee



Global issues such as COVID-19 pandemic and climate change which are difficult to control based on predictions unlike in the past, are changing the market paradigm as a consequence.

Strengthening ESG evaluation by institutional investors, legalizing the ESG by the government, and increasing communication channels (social media) is essential for the company's sustainable growth, meaning the importance of rapid change from a shareholder priority to a stakeholder perspective.

Acting against the ESG principles, which are the demands of the times, is highly likely to bear controversy and negative public opinion. ESG is not only the "right thing" to do, but a "must-do." Therefore, we should strive to create new values by linking ESG with business.

Amid this trend, LG Energy Solution is building an optimized business model. We should take into consideration the ways to instill infinite trust in our products among clients, and reflect the ESG elements in the right place in the value chain from production to disposal.

Human rights and diversity issues, in particular, need constant interest and risk management. In terms of recycling, we need to keep our global competitiveness with unparalleled strategies.

ESG Committee will monitor whether the essential ESG tasks are implemented and are systematically managed from the viewpoint of strategy to ensure that LG Energy Solution meets the demands of the times and improves its competitiveness.

ESG committee will faithfully fulfill our roles to assist LG Energy Solution to grow into a company that meets social responsibility.

Thank you.

In order to preemptively sense the business risks from the strengthening of various battery-related regulations, LG Energy Solution constantly monitors new enactments and amendments across the globe by utilizing the global network. We are also striving to voice our opinions by cooperating with regional industrial associations and organizations and taking part from the enactment stage of each regulation.

Recently, EU made a major amendment to the Battery Directive that had been recommended to increase sustainability of the battery industry, and proposed strengthening it into a regulation, which will be applied uniformly to EU member states. Major changes are expected throughout the battery industry, including the management of carbon footprint of batteries, mandatory due diligence of supply chains, and reuse/recycling of batteries.

Accelerated by the Biden administration's strengthening of eco-friendly policies, the U.S. is coming out with various policies and laws to promote the distribution of eco-friendly vehicles for reducing GHG emissions, increase competitiveness of battery manufacturing, and resolve supply chain risks. We are taking close monitoring of the relevant situation as detailed policies are expected to be announced subsequently.

Compliance System

Compliance Management System

LG Energy Solution appointed the compliance officer from the Board of Directors at the time of the founding 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.

We also operate the compliance management system to identify domestic and foreign laws that must be obligated during business operations and to prevent employees from violating laws.

The compliance support and management activities of LG Energy Solution are managed by the compliance officer appointed by the Board of Directors. Evaluation on the efficiency of compliance support and management system will be conducted and reported to the Board of Directors every year. The Legal Compliance Team under the Legal Affairs Office is in operation to support the compliance officers.

Strengthening Compliance Education

LG Energy Solution develops and operates various compliance education programs for different positions and conducts annual online compliance education. We also carry out online compliance education for employees more than twice a year. In the first half of 2021, we conducted training courses on the Protection of Management Information, Fair Trade Point You Should Know, Information Security, Fair Trade, Environmental Safety and Export/Import Regulation as online programs. In the second half, we plan to conduct training courses on Company's Major Compliance Risk, Contacting Competitors and Trading Between Subsidiaries, Anti-corruption, and Personal Information Protection, as well as compliance education by rank for executive directors, team leaders and dispatched personnel, and job-specific education for high-risk departments, such as Purchasing, Sales, and R&D.

In addition, by distributing vendor trading guidelines, legal guides for overseas dispatched personnel, and various newsletters, we have enhanced the employees' sense of compliance. LG Compliance Guidelines, in particular, are produced based on LG Group's code of conduct—Jeong-Do Management—and distributed to help employees understand and respond to legal risks.

Prevention of Compliance Risks

LG Energy Solution not only complies with global standards but also manages compliance of overseas corporations in order to minimize management risks and fulfill the social responsibility. In particular, we are frequently examining and analyzing the domestic and international law enactments/amendments and regulation trends. As part of the integrated risk assessment to secure validity of the compliance management system, we are inspecting the compliance status of domestic and overseas business sites through checklists. When legal risks are identified through the compliance checks, they are shared with the relevant department managers so that proper measures such as suspension, improvement, correction, or sanction can be taken. Moreover, we have established a recurrence prevention plan to prevent the occurrence of the same or similar violations. When tasks closely related to legal risks need to be performed, they must be run by the legal department in advance, and the results must be reported to the compliance officer.

System and Education of Autonomous Compliance of Fair Trading

LG Energy Solution is operating a self-compliance program for fair trade to encourage fair trade and competition in all processes of performing tasks. LG Energy Solution aims to establish a culture of autonomous compliance with fair trade through fair trading compliance operation, including monitoring, inspection, and education under the supervision of the Fair-Trade Team under the legal office. More specifically, we regularly monitor the compliance status of related fair trade, such as collusion, subcontracting, and internal transactions, and support the responsible department's compliance with fair trade laws by regularly providing legal advice and feedback on fair trade. Furthermore, we are making efforts to prevent risks through regulations, revision of guidelines, and dissemination activities to establish a fair-trade compliance system.

To this end, we conduct fair trade trainings for all employees at least once a year, and provide the latest compliance practical training for new employees with or without career background and departments at the point of contact with suppliers. In addition, by continuously distributing and announcing handy materials, such as newsletters and guidelines related to fair trade issues, we are spreading autonomous compliance with fair trade throughout the company.

ESG Disclosure & Communication

ESG requires companies to communicate with clients, investors and stakeholders in a transparent manner. LG Energy Solution provides transparent disclosure of the company's current and future values through public disclosure, and operates various channels, such as company website, social media and exhibitions, to effectively communicate with various stakeholders of all social standings. In addition, we have joined global initiatives to actively communicate and cooperate with various companies, organizations, and stakeholders who share the same purpose.

Transparent Public Disclosure

It is now the time where investors, clients and the government require companies to adopt higher level of ESG management system. Hence, transparent disclosure of management information has become a mandatory for all companies.

LG Energy Solution considers transparent disclosure of management conditions to shareholders, clients and stakeholders crucial. Based on business reports (quarterly / semiannual / annual), periodic public disclosure of collective status and other ad hoc public disclosures, we disclose accurate and sufficient information on company's business status, and current and future corporate values.

As of the end of June 2021, we have conducted nine public disclosures, including the business report (December 2020) and the quarterly report (March 2021). We will more actively and transparently communicate with investors and stakeholders in the future.

LG Energy Solution would like to publish the first ESG Report (2021), which includes our ESG status and plans, and disclose our ESG management activities and performance to stakeholders transparently. We promise to establish and faithfully implement ESG policies as foundation for the sustainable growth of the company.

LG Energy Solution's public disclosures are available to view from Data Analysis, Retrieval and Transfer System (DART, dart.fss.or.kr).

Joining Global Initiative

By joining global initiatives, LG Energy Solution communicates and cooperates with various companies, organizations and stakeholders that share the same vision.

1) CDP

Since 2012, LG Energy Solution has been publishing the CDP report for climate change response as an affiliate of LG Chem upon requests from major clients. From 2021, as an independent corporation, we will voluntarily participate in CDP report preparation and actively communicate with stakeholders and customers.

2) RE100, EV 100

For the first among battery companies, LG Energy Solution has pledged to achieve RE100 and EV100 at the same time (April 2021), and declared the goal of shifting to renewable electricity and Eco-friendly vehicles by 2030. As a leading eco-friendly energy company, we promise to set the example in reducing GHG emissions in battery production and become an active promoter of EVs.

3) Worldwide Battery Industry Associations

LG Energy Solution is a member of the Battery Industry Associations not only Korea but also Europe and the U.S., where our production bases and major markets are located. Through membership participation, we preemptively monitor battery industry-related policies and trends all over the world, and actively communicate with local governments, related institutions and similar industries.

- Korea Battery Industry Association (K-BIA, Korea)
- The Advanced Rechargeable & Lithium Battery Association (Recharge, Europe)
- The Rechargeable Battery Association (PRBA, US)

4) On-Going Global Initiative

LG Energy Solution has joined and participated in the World Economic Forum (WEF), Global Battery Alliance (GBA) and Responsible Mineral Initiative (RMI) through the parent company LG Chem, and is considering gradual shift to independent membership and activities.

Communication

For more active communication with diverse stakeholders including clients, LG Energy Solution operates various channels, such as the company website, blog (to be launched in September 2021), and social medias (Facebook, YouTube, Linked in). We will also actively participate in domestic and international industrial fairs, conferences and forums as an effort to communicate with more stakeholders through diverse channels.



- Website
- Facebook
- YouTube
- LinkedIn
- NAVER Post
- Blog (To be opened in September)
- Interbattery

- <http://www.lgensol.com>
- <https://www.facebook.com/LG-Energy-Solution-102973855312242>
- <https://www.youtube.com/lgenergysolution>
- <https://www.linkedin.com/company/lg-energy-and-solution>
- <https://post.naver.com/lgensolpr>
- <http://inside.lgensol.com>
- <http://www.interbattery.or.kr>

Chapter III

ESG Synergy





ESG Synergy

Board of Directors

Composition of the Board of Directors

Composition and Independence of the Board of Directors

As of June 2021, the Board of Directors (BoD) of LG Energy Solution consists of two executive directors, one non-executive director and four independent directors. In order to carry out the checks and balances function of the BoD, we keep the ratio of independent directors to more than majority. Each director serves a tenure of three years, and may be reappointed by considering activities and achievements.

Non-executive director	Shin Hak-cheol	BoD Chairperson, member of the Nomination Committee for Independent Directors Current CEO of LG Chem, former Executive Vice Chairperson of 3M
Executive director	Kim Jong-hyun	CEO, member of the ESG Committee Current CEO of LG Energy Solution, former President of LG Chem's Battery Unit
	Lee Chang-sil	Member of the Internal Transaction Committee Current CFO of LG Energy Solution, former Management Lead of LG Chem's Battery Unit
Independent director	Shinn Mee-nam	Chairperson of the ESG Committee Current independent director of S-Oil
	Yeo Mee-sook	Chairperson of the Internal Transaction Committee Current professor of Hanyang University Graduate School of Law
	Ahn Duk-geun	Chairperson of the Nomination Committee for Independent Directors Current professor of Seoul National University Graduate School of International Studies
	Han Seung-soo	Chairperson of the Audit Committee Current professor of Korea University Business School

Average term of directors	Average age of directors	Completion of tenure
3.5 months	57.4	Director Lee Chang-sil (March 2022), Director Shin Hak-cheol (March 2023), Director Kim Jong-hyun (March 2023), Director Shinn Mee-nam (March 2024), Director Yeo Mee-sook (March 2024), Director Ahn Duk-geun (March 2024), Director Han Seung-soo (March 2024)

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

Expertise and Diversity

Possessing deep understanding in company management, the four independent directors are experts of lithium-ion battery industry, which is LG Energy Solution's major scope of business, as well as finance, law, and international commerce that are areas closely related with the company management. To enhance the expertise and efficiency of the BoD, LG Energy Solution operates four committees under the Board of Directors: the Audit Committee, the Nomination Committee for Independent Directors, the Internal Transaction Committee, and the ESG Committee.

Audit Committee

The Audit Committee was placed in June 2021 to audit the accountings, business and job implementation of directors, to demand report on sales, and to investigate the company's business affairs and financial status. All members of the Audit Committee are independent directors.

Nomination Committee for Independent Directors

The Nomination Committee for Independent Directors was established in June 2021 to recommend candidates with expertise and competence and those who meet the interests of LG Energy Solution with regard to the stakeholders and appoint candidates at the shareholders' general meeting. LG Energy Solution does not discriminate based on gender, nationality, or race to secure the diversity of independent directors. To ensure the fair selection of candidates for independent directors, two of the three members are appointed as independent directors.

Internal Transaction Committee

The Internal Transaction Committee was formed in June 2021 to reinforce transparency and fairness in internal transaction. The Internal Transaction Committee examines the transactions with the largest shareholder and affiliated person under the Commercial Law, 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 independent directors.

ESG Committee

In order to strengthen ESG management, we have formed the ESG Committee in June 2021. 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 independent directors.

Operation of Board of Directors

The BoD officially meet quarterly and host ad hoc board meetings as necessary. In 2021, the Board held 11 meetings that resulted in 38 approvals and five reports. Meetings are mandatory for the BoD except in unavoidable situations. The participation rate is 100% as of June 2021.

Evaluation and Compensation of Board of Directors

Independent evaluations on the activity and performance of directors are conducted at the end of each term. The results are reflected in the decision of reappointment. Directors receive compensation within the limit approved at the shareholders' general meeting. Wages for executive directors are calculated considering their performance. 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 2020 (based on term 1 ending in December 2020), the total compensation of BoD approved at the general meeting of shareholders was KRW 200 million, and the total pay out to directors was KRW 140 million. The upper limit for BoD compensation approved at the 2021 general meeting of shareholders is KRW 8 billion.

R&D

As a global leader of battery industry, we believe that the history of LG Energy Solution reflects the history of the global battery industry.

LG Energy Solution has split off lithium-ion battery business from LG Chem which is a mother company of the LG Group and launched a company specializing in energy solution in December 2020. Since initiating research on lithium-ion battery in 1992, we are now into 30th year in the battery industry. By supplying the world’s first electric vehicle batteries for mass production in 2009, developing futuristic batteries of various forms—e.g., cables, curved and stepped batteries—in 2013, and achieving continuous technological innovation such as developing the world’s first free-form battery in 2018, we are taking the lead in the global battery market.

Moreover, LG Energy Solution has established production infrastructures in major global bases such as the U.S., China and Poland, in addition to Korea, securing global business network and R&D organization to realize timely go-to-market strategy and true global management.

LG Energy Solution has been constantly growing based on the technology and accumulated global network over 30 years, and is expected to achieve sales revenue of KRW 30 trillion through explosive annual growth of 30% on average by 2024.

Increasing R&D Investment

In order to provide holistic energy solutions to customers, LG Energy Solution is strengthening the competitiveness in the current businesses with focusing on core technologies such as next-generation battery that applied high-capacity/safety materials and advanced battery cell manufacturing process and is also expanding investments to new technologies and products for future growth in battery recycling, reuse and next-generation battery. Despite the rapid increase in sales in 2020, we have executed 3.4% R&D investment budget to the sales.

R&D Status

Item	Unit	2018	2019	2020
R&D Personnel	Person	1,978	2,457	2,576
R&D Investment Expense	KRW 100 million	3,195	3,873	4,220
R&D Investment Ratio (to sales)	%	4.9	4.6	3.4
New Product Sales	KRW 100 million	58,015	75,230	104,173

Figures before the split-off in December 2020 were calculated based on the number of R&D personnel at LG Chem Battery Unit

Efforts to Innovation in R&D

Development of High-Capacity, Long-Life, High-Energy Density Battery Technology

LG Energy Solution has become a global leader of batteries by securing excellent battery products and technologies through active R&D investment.

Automotive battery business division has been developed advanced battery material that perform 250 Wh/kg or higher energy density has been developed. Recently, we succeeded in developing a premium EV battery that enables fast-charge to 80% within 25 minutes and drive over 400km in a single charge. In addition, by developing a long-cell which has 1.5 times longer cell length, we not only reduced the number of battery cell components but also achieved higher energy density.

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 upto 32kWh electricity when two units are connected in parallel. A modular design is applied for easy maintenance, and an additional real-time monitoring system was introduced in this smart product to take preemptive measures to potential issues. As for the ESS battery for power-grid, the standardized rack design increases convenience for the on-site installation and saves time. We are expanding to the global ESS markets by supplying 1.2 GWh ESS to Vistra, a power generation headquartered in the U.S., which is the world's largest scale for a single ESS project.

For mobility & IT battery business division, we have developed cylindrical cells that's universal to both EVs and ESS, reaching energy density of up to 766 Wh/L, and can be rapidly charged up to 85% in just 40 minutes with 1,000 times charging until 80% lifetime. Furthermore, we have developed a premium pouch type battery cell for smartphone with up to 730 Wh/L high energy density that can be used for approximately 1,000 times until 80% lifetime.



Supplying 1.2 GWh-scale power grid ESS to Vistra in the U.S.

Development of Unparalleled Battery Materials Technology

The first of LG Energy Solution's materials technologies that differentiate it from others is high-capacity cathode material technology. This technology enabled us to realize high-energy batteries based on high-nickel content by adding aluminum to the 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 SRS (Safety Reinforced Separator) 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. LG Energy Solution is expected to take the lead in the specialty market by taking the superior position in the EV market, which is rapidly growing through differentiated materials technology and innovation.



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 light-weight lithium sulfur battery cells with high energy density.

All-solid-state battery cells are highly suitable to be used for electric vehicle battery cells due to their nature of preventing explosion and ignition by replacing the existing liquid type electrolyte into solid electrolyte. All-solid-state electrolytes. There are two types of solid electrolyte of All-solid-state electrolytes, polymer and sulfides based, and each of which have different pros and cons. LG Energy Solution has been developing both types of solid electrolytes including the mass production technology and its battery cell development as well.

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 light-weight material, as cathode. This technology is being developed by applying to flying objects such as drones where compactness is the key. It is lighter than the lithium-ion batteries that are currently being used, and has 50% higher energy density and 20% lower costs.



Environmental R&D

Reuse & Recycle

LG Energy Solution is not only performing battery manufacturing and sales, but also establishing closed-loop eco-system that actively collects after-use batteries from scrapped EV vehicle to enable them to be circulated for recycling and reused for second life to minimize environmental impact. The collected scrapped batteries that had been delivered to automotive OEM will be reused for other purposes. And those that cannot be reused will be recycled back to battery manufacturing process through material recycling process.



Reuse ESS Charging Station

LG Energy Solution is currently operating the EV “battery reuse” system in Ochang Plant, South Korea. We store up energy during nighttime by connecting Reuse ESS to 1 unit of rapid recharger, then use it for charging electric vehicles during the day. The batteries used here are not the ordinary batteries; they are previously consumed their first life as EV taxi in Seoul, and are collected them for reusing after several years of operation.

Information Security

LG Energy Solution protects and manages our 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, implement various activities to improve awareness of security, take real-time response to internal and external cyber threats, and build capacity to prevent accidents. As such, LG Energy Solution is dedicated to continuously developing such security system.

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's why we have established a systematic information security management system according to the international information security management system ISO/IEC 27001 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 and security organizations. We manage a policy that all members can refer to and comply with in performing the 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 information security organization at the headquarters, business sites and overseas corporations. 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 on various security status and issues at each business site, and hold information security committee attended by the management and executive directors of relevant departments to take interest in major information security agendas and ensure timely decision making.

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. In overseas, we are carrying out protective measures according to the pertinent laws and policies of the country/region where each corporation is located, such as the GDPR in Europe 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 promotion activities. We conduct information security education of members at least once a year, and provide customized education by information entity, such as new employees, prospective retirees, business partners, visitors, and national key technicians/personal information handlers. Moreover, we spread security rules and information security accident cases through various promotion activities in order to establish an everyday security culture and conduct activities that all members can partake with an interest in security.

Preventive and Responsive Activities to Information Security Accident

LG Energy Solution operates a constant security control system from the office area to the process facility area, and continuously improves our security level and response capabilities by regularly inspecting and simulating security vulnerabilities and carrying out mock exercise in preparation of internal and external cyber-attacks.

In terms of personal information protection, we also conduct a security review in advance to check for any infringement of personal information and compliance issues. In addition, we have appointed a person in charge of personal information protection to handle personal information protection inquiries, complaints handling, and damage relief of the information subject.

As of the first half of 2021, LG Energy Solution has had no complaints, data leakage/theft/loss cases inquired/ submitted from regulatory agencies or information holders. We will preemptively block all risk factors and strengthen the security system to safely protect and manage personal information of the members, customers, business partners, and stakeholders.

Jeong-Do Management

Ethical Management Policy

Jeong-Do Management Principles

“Jeong-Do” Management represents LG’s unique code of conduct. “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.

LG Code of Ethics

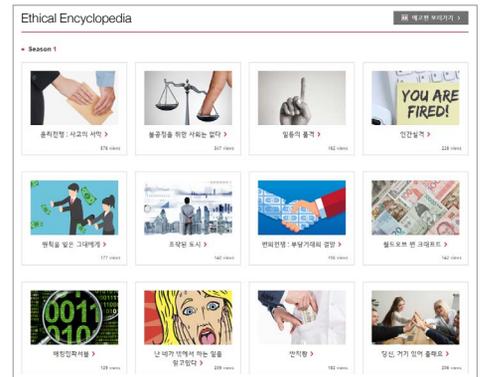
The LG Code of Ethics provides all LG Group employees with the standards for appropriate behavior and value judgment, which serves as the foundation for all business conducts of entire LG Energy Solution employees and global business sites. The LG Code of Ethics consists of Responsibilities and Duties to Customers, fair competition, Fair Transactions, basic ethics of employees, Corporate Responsibilities for Employees and Responsibility to the Nation and Society.

Ethical Management Program

Internalization of Jeong-Do Management

LG Energy Solution conducts periodic education on Jeong-Do Management for employees and suppliers. We produced the Jeong-Do Management “Focus Board”—which describes recently occurring cases—and the “Ethics Dictionary” series, a web drama about Jeong-Do Management, sharing them with Korean and overseas business sites in local languages to strengthen the commitment of all members to Jeong-Do Management.

Moreover, we conducted the “Knowing the Code of Ethics” as a visiting class based on actual cases and conducted the non-face-to-face education (remote class) during the COVID-19 pandemic.



[윤리대사전] EP-01. 윤리전쟁 : 사고의 서막



분류	윤리대사전
과정명	[윤리대사전] EP-01. 윤리전쟁 : 사고의 서막
키워드	기본과 원칙, 고객 중시, 단합금지, 공정한 경쟁
첨부파일	01 그림1.png(2,064.1KB)
내용	"기본과 원칙 준수, 고객을 위한 가치 창조" 공정한 경쟁으로 고객에 대한 책임과 의무를 다해야 하는 이유!! 답답이나 편법 행위를 하지 않아야 하는 이유!!
후기	<div style="border: 1px solid gray; height: 20px; width: 100%;"></div>

작성
목록

Division	Number of Sessions	Participants
Field Group Education (2020)	24 sessions	730 persons
Remote Class (2020)	10 sessions	173 persons

Legal Compliance of Ethical Management

Reporting System

LG Jeong-Do Management has a “Corruption Reporting System” to prevent violations of Jeong-Do Management such as corruption and bribery of employees; the anonymous reporting is available as well. In the case of real-name reporting system, we are operating a system called “Inspection of Disadvantage to Informer” as well as through confidential protection of informants’ information and reports to prevent disadvantages. In addition, we are conducting a “corruption reporting reward system” that rewards informants if the company’s reduction in loss is confirmed through the reports.

Response to Corruption (2020, Energy Solution)		
Investigation cases	Number of personnel punished (heavy sanctions)	Seizure of transaction
5 cases (corruption type: receiving monetary goods and entertainment, asset misappropriation)	7 persons	0

Risk Management

By establishing a company-wide crisis management system, LG Energy Solution analyzes risks in quality, safety, business, finance, society/ environment, and conducts countermeasures accordingly. We operate a dedicated organization responsible for proactive risk management. Quality, safety and environment, and compliance risks are selected as core risks to strengthen the quality control system, and periodic education and diagnosis of safety, environment, and compliance risks are carried out. LG Energy Solution plans to continuously work on such risk management system to minimize various risks from business operation.

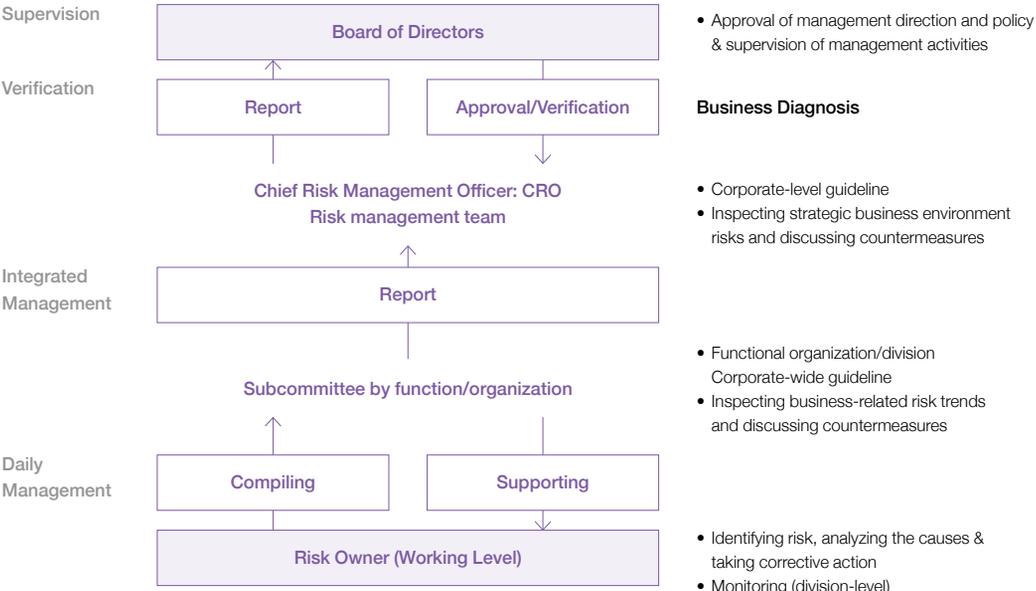
Risk Management

Company-wide Risk Management System

LG Energy Solution operates a risk management organization for proactive risk management. The Chief Risk Management Officer (CRO), who oversees risk management in the company, usually chairs the crisis management committee and serves as the head of the emergency response committee or executive secretary in case of an emergency and supports decision-making of top management.

Normally, the crisis management committee establishes 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, LG Energy Solution operates a comprehensive situation room with the emergency committee, the top decision-making organization, and the general organization for crisis communication to respond to the crisis.



Risk Identification and Management

Identifying Risks

LG Energy Solution pinpoints risks in various areas by analyzing the mid- to long-term strategies and work processes and conducting interviews. A weekly management system was implemented to cope with the rapidly changing business environment. Key issues of each division and company-wide supports are discussed at the subcommittee. We also focus on examining changes in the business environment before establishing mid- to long-term strategies and business plans to prevent and reduce risks.

Response to Risk and Follow-up Management

In the event of a crisis, LG Energy Solution operates a company-wide crisis response system in accordance with the crisis response manual to set up an emergency response committee and operate a comprehensive situation room to assess preliminary damage and support accident recovery. Once the crisis is over, the risk management organization monitors the process of implementing measures to prevent recurrence and verifies the results. We are preventing recurrence of similar crisis by conducting improvement activities of crisis response manual and system and horizontally carrying out improvements.

Identification of Major Risks and Mitigation Action

LG Energy Solution manages quality risk, occupational safety risk and compliance risk as the core risks. To manage quality risk, we strengthen quality control based on the system and operate an organizational system specializing in quality control across the company. In terms of management of occupational safety risk, we are putting utmost effort to protect customers and employees by operating the occupational safety committee and safely managing the workplace environment of all business sites.

In order to manage compliance risk, we are regularly identifying legal obligations of the relevant division in the compliance subcommittee and the company. To prevent risk from the breach of the law, we take preventive measures against noncompliance, such as unfair trading, price-fixing, breach of trading secret, by holding regular/ ad hoc educations and inspecting compliance.

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	<ul style="list-style-type: none"> Need to manage quality risk of small/medium to large cell products for use by consumers 	<ul style="list-style-type: none"> Operating a company-wide quality control organization, aiming to strengthen system-based quality control and optimize quality control Strengthening quality innovative activities through lean-six sigma 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Strengthening chemicals safety education for hazardous substance handlers Strengthening preemptive filtering of substances exceeding legal standards for chemical substances at home and abroad, identifying alternative substances to hazardous substances, regularly inspecting occupational safety of business sites at home and abroad 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, integrated risk and performance management through the construction of the safety and environment portal
Business Risk	Management of Order	<ul style="list-style-type: none"> Need for systematic management due to an increase in project orders and large projects won 	<ul style="list-style-type: none"> Establishing company-wide order management system Strengthening company-wide examination standards for orders (securing profitability, responding to risk, etc.) Securing profitability through management from the quotation stage Establishing the response basis to risk of loss
	Intensifying Competition	<ul style="list-style-type: none"> Intensifying competition in cell market and change in competitive composition 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Poor mid- to long-term growth and inefficient resource operation can result from an inappropriate business portfolio 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Global business expansion can be exposed to various risks such as market, credit, and liquidity risks 	<ul style="list-style-type: none"> 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/Environmental Risk	Carbon Policy Response to Change	<ul style="list-style-type: none"> Increase of production costs caused by operational expenses due to reduced investment in energy conservation 	<ul style="list-style-type: none"> Making investment decisions for energy reduction based on the priorities for maximum effects

Appendix

Major Performance Index

- Scope of Stakeholders
- Interview of Stakeholders
- Materiality Assessment

Index

- GRI Standards
- TCFD
- VRF SASB Standards

UN SDGs

Linked Activities

Third-party Verification Statement

Group Membership Status

Major Performance Index

Economy

Major indicator		Unit	2020*	2019***	2018***
Scale of organization	Number of employees	Person	23,344		
	Business site	Republic of Korea (Including headquarters, research centers, etc.)	Number	6	
		US (Production corporation)	Number	1	
		China (Production corporation)	Number	3	
		Taiwan (Sales corporation)	Number	1	
		Poland (Production corporation)	Number	1	
		Germany (Sales corporation)	Number	1	
		Australia (Sales corporation)	Number	1	
		Sales amount	KRW million	1,461,068	
		Equity capital	KRW million	6,879,615	
	Liabilities	KRW million	12,376,390		
Generation & distribution of direct economic value	Sales amount (A)	KRW million	1,461,068		
	Operating expenses(Employee wages and welfare expenses, etc.)** (B)	KRW million	699,254		
	Payment to investor (B)	KRW million	126,581		
	Payment to government (B)	KRW million	None		
	Community investment (B)	KRW million	241		
	Payment to supplier (B)	KRW million	780,225		
	Deferred economic value (C)= (A)-(B)	KRW million	(145,233)		
Proportion of spending on local suppliers	Republic of Korea	%	59.50	62.40	58.50
	US	%	5.20	3.30	1.90
	China	%	49.20	33.20	37.50
	Poland	%	11.60	8.50	6.70

*As of December 2020 (1 month) within the business report term

**Selling and administrative expenses in business report

***2018-2019 indices are based on performance of LG Chem Battery Unit

Major indicator		Unit	2020	2019	2018	
Business site with corruption risk	Total number of business sites (A)	Number	14			
	Business site with corruption risk evaluated	Number (B)	Number	14		
		Proportion (A)/(B)	%	100		
Notice on anti-corruption policy and procedure (BoD)	Republic of Korea	Number	Person	4		
		Proportion	%	100		
Notice on anti-corruption policy and procedure (Employee)	Republic of Korea	Number	Person	7,524		
		Proportion	%	100		
Notice on anti-corruption policy and procedure (Supplier)	Republic of Korea	Number	Number	617		
		Proportion	%	100		
Anti-corruption trained BoD member (Governance)	Republic of Korea	Number	Person	4		
		Proportion	%	100		
Anti-corruption trained employee (by country)	Republic of Korea	Number	Person	963		
		Proportion	%	13		
	US	Number	Person	0		
		Proportion	%	0		
	Poland	Number	Person	9,222		
		Proportion	%	100		
	Germany	Number	Person	49		
		Proportion	%	100		
	Australia	Number	Person	0		
		Proportion	%	0		
	China	Number	Person	2,697		
			%	47		
	Confirmed Corruption Cases and Measures	No. of Confirmed Corruption Cases		Cases	5	
		No. of Sanction Cases		Cases	7	
Number of contracts with suppliers terminated due to breach of corruption		Cases	0			
Cases where the contracts with suppliers were not renewed due to breach of corruption		Cases	0			
Unfair transaction	Litigation	In progress	Cases	0		
		Completion of process	Cases	0		

Environment

Major indicator		Unit	2020	2019	2018
Total energy consumed	Electricity, LNG, Steam, etc.	TJ	16,427	12,150	9,510
Usage of renewable energy	Photovoltaic power facility	TJ	23	15	13
	External purchase (sourced from outside, such as Green Pricing, REC purchase)	TJ	2,432	787	25
GHG emissions	Direct GHG emissions (Scope 1)	tCO2-e	206,056	132,169	79,293
	Indirect GHG emissions (Scope 2)	tCO2-e	1,015,865	830,623	646,127
Greenhouse gas emissions reduced from reduction activities	Scope 1	tCO2-e	1,839	1,532	4,546
	Scope 2	tCO2-e	24,127	16,452	16,243
Water consumed	Total water consumed	Ton	6,237,220	4,637,880	3,182,076
Ozone depletion material emitted	Production volume	tCFC-11	None	None	None
	Imported volume	tCFC-11	None	None	None
	Exported volume	tCFC-11	None	None	None
Atmospheric emissions of harmful materials	NOx	kg	59,737		
	SOx	kg	3,549		
	Persistent organic pollutants (POPs)	kg	-		
	Volatile Organic Compounds (VOCs)	kg	35,369		
	Hazardous Air Pollutants (HAPs)	kg	-		
	Particulate Matter (PM)	kg	4,974		
	Other atmospheric emissions	kg	7,562		
Wastes emissions	Total weight of wastes	Incinerated wastes	Metric Tons	43,499	
		Landfill wastes	Metric Tons	5,603	
		Wastes for recycling	Metric Tons	98,022	
		Other processing	Metric Tons	6,308	
		Total weight of wastes	Metric Tons	153,432	
	Designated wastes	Designated waste to be incinerated	Metric Tons	24,157	
		Designated waste to be landfilled	Metric Tons	-	
		Designated waste to be recycled	Metric Tons	15,291	
		Other processing	Metric Tons	2,038	
		Total weight of designated wastes	Metric Tons	41,486	
	General wastes	General waste to be incinerated	Metric Tons	19,342	
		General waste to be landfilled	Metric Tons	5,603	
		General waste to be recycled	Metric Tons	82,731	
		Other processing	Metric Tons	4,270	
		Total weight of General wastes	Metric Tons	111,947	

Major indicator			Unit	2020	2019	2018
New employee recruitment	By age (Domestic)	Number of personnel under age 30	Person	252	670	363
		Proportion of personnel under age 30	%	51.5	57.9	45.9
		Number of personnel aged 30 - 50	Person	221	461	410
		Proportion of personnel aged 30 - 50	%	45.2	39.8	51.9
		Number of personnel over age 50	Person	16	26	17
		Proportion of personnel over age 50	%	3.3	2.2	2.2
	By age (Overseas)	Number of personnel under age 30	Person	6,784	6,784	6,020
		Proportion of personnel under age 30	%	73.6	69.5	75.9
		Number of personnel aged 30 - 50	Person	2,258	2,617	1,699
		Proportion of personnel aged 30 - 50	%	24.5	26.8	21.4
		Number of personnel over age 50	Person	174	362	212
		Proportion of personnel over age 50	%	1.9	3.7	2.7
	Gender (Domestic)	Number of males	Person	411	979	641
		Proportion of males	%	84.0	84.6	81.1
		Number of females	Person	78	178	149
		Proportion of females	%	16.0	15.4	18.9
	Gender (Overseas)	Number of males	Person	6,586	6,876	5,664
		Proportion of males	%	71.5	70.4	71.4
		Number of females	Person	2,630	2,887	2,267
		Proportion of females	%	28.5	29.6	28.6
	By country	Number of new recruits (Korea)	Person	489	1,157	790
		Proportion (Korea, %)	%	5.0	10.6	9.1
		Number of new recruits (US)	Person	516	641	622
		Proportion (US, %)	%	5.3	5.9	7.1
		Number of new recruits (Poland)	Person	2,923	2,794	1,269
		Proportion (Poland, %)	%	30.1	25.6	14.6
		Number of new recruits (Germany)	Person	10	23	11
		Proportion (Germany, %)	%	0.1	0.2	0.1
		Number of new recruits (Australia)	Person	-	3	6
		Proportion (Australia, %)	%	-	0.0	0.1
Number of new recruits (Taiwan)		Person	1	4	6	
Proportion (Taiwan, %)		%	0.0	0.0	0.1	
Number of new recruits (China)		Person	5,766	6,298	6,017	
Proportion (China, %)		%	59.4	57.7	69.0	
Number of employees by type of employment/ gender	Permanent position (male)	Republic of Korea	Person	6,311	5,609	4,740
	Permanent position (female)	Republic of Korea	Person	1,120	898	709
	Contract-based position (male)	Republic of Korea	Person	65	61	34
	Contract-based position (female)	Republic of Korea	Person	6	3	1
Number of employees by region	Domestic/overseas	Republic of Korea	Person	7,502	6,571	5,484
		US	Person	1,349	1,246	987
		China	Person	10,172	9,163	7,486
		Poland	Person	4,177	2,866	1,174
		Germany	Person	85	74	55
		Taiwan	Person	42	46	44
		Australia	Person	9	10	8
		Others	Person	9	10	11

Major indicator			Unit	2020	2019	2018	
Number of employees by type of employment/gender (domestic)	Permanent	Male	Person	6,387	5,677	4,780	
		Female	Person	1,115	894	704	
	Part-time	Male	Person	5	6	7	
		Female	Person	10	5	8	
Employee retirement	Below age 30 (Korea)	Number	Person	67	58	51	
		Proportion	%	35.1	29.0	23.5	
	Ages 30–50 (Korea)	Number	Person	100	122	151	
		Proportion	%	52.4	61.0	69.6	
	Over age 50 (Korea)	Number	Person	24	20	15	
		Proportion	%	12.6	10.0	6.9	
	Male (Korea)	Number	Person	161	180	185	
		Proportion	%	84.3	90.0	85.3	
	Female (Korea)	Number	Person	30	20	32	
		Proportion	%	15.7	10.0	14.7	
	Total employee retirement	Republic of Korea	Number	Person	191	200	217
			Proportion	%	3.4	4.0	5.5
US		Proportion	%	44.9	39.8	33.1	
China		Proportion	%	23.5	32.4	57.3	
Taiwan		Proportion	%	7.9	5.0	28.2	
Poland		Proportion	%	32.9	38.7	34.6	
Germany		Proportion	%	4.3	10.0	11.4	
Australia		Proportion	%	28.6	11.1	42.9	
Parental leave	Number of employees parental leave claimed		Person	149	160	132	
	Number of employees reinstated after parental leave		Person	147	160	132	
	Number of employees with continued service for over 12 months after returning from parental leave		Person	110	110	88	

*Indicated only the proportion as the retirement calculation methods differ by overseas corporation

Major indicator		Unit	2020	2019	2018	
Application of a system assessed/verified by the occupational safety and health management system	Employee that applied the occupational safety and health management system that completed internal assessment/verification	Number	Person	22,674	19,900	16,915
		Proportion	%	100	100	100
	Supplier employee that applied the occupational safety and health management system that completed internal assessment/verification	Number	Person	9,700	9,600	8,160
		Proportion	%	100	100	100
	Employee that applied the occupational safety and health management system that completed external assessment/verification	Number	Person	21,475	18,810	16,074
		Proportion	%	94.7	94.5	95.0
	Supplier employee that applied the occupational safety and health management system that completed external assessment/verification	Number	Person	9,545	9,508	8,137
		Proportion	%	98.4	99.0	99.7
Injuries arising out of duty (employee)	Deceased employees	Number	Person	1	1	0
	Injured employees	Number	Person	22	17	22
		LTIR(rate) ¹	Number of cases per 200,000 hours	0.08	0.06	0.08
Injuries arising out of duty (supplier)	Deceased supplier employees	Number	Person	0	0	0
	Injured supplier employees	Number	Person	10	3	5
		LTIR (rate)	Number of cases per 200,000 hours	0.09	0.02	0.04
Disease arising out of duty (employee)	Employee deaths	Number	Person	0	0	0
	Disease occurrence in employee	Number	Person	0	0	0
		OIFR(rate) ²	Number of cases per 200,000 hours	0	0	0
Disease arising out of duty (supplier)	Deceased supplier employees	Number	Person	0	0	0
	Disease occurrence in supplier employees	Number	Person	0	0	0
		OIFR (rate)	Number of cases per 200,000 hours	0	0	0
Number of discrimination cases and countermeasures	Number of incidents	Total	Cases	0	1	0
		Race	Cases	0	0	0
		Skin color	Cases	0	0	0
		Gender	Cases	0	1	0
		Religion	Cases	0	0	0
		Political opinion	Cases	0	0	0
		Nationality	Cases	0	0	0
		Social background	Cases	0	0	0
	Others	Cases	0	0	0	
Number of incidents with actions taken	Cases	0	1	0		
Number of complaints with evidence of violating personal information protection of clients and loss of client information	Number of complaints	Number of external complaints confirmed as problems	Cases	0	0	0
		Number of complaints from regulating institutions confirmed as problems	Cases	0	0	0
	Number of customer data leakage	Cases	0	0	0	
	Number of customer data theft	Cases	0	0	0	
	Number of customer data loss	Cases	0	0	0	

1) Lost-Time Injuries Rate (LTIR) = (Number of lost time injuries in the reporting period)/(Total hours worked in the reporting period) X 200,000

2) Occupational Illness Frequency Rate (OIFR) = (Number of occupational illness)/(Total working hours) X 200,000

Governance

Major indicator		Unit	2020	2019	2018	
Composition of BoD and Committee	Average tenure of BoD (Office tenures after spin-off as of July 2021)	Months	3.5			
	Number of female directors (As of July 2021)	Person	2			
	Frequency of assessing effectiveness of BoD (As of July 2021)	Times	0			
Review of economic, environmental and social topics at BoD	Number of reviews of economic, environmental and social impact and risk at BoD (As of July 2021)	Times	1			
BoD's review of ESG-related topics	Number of important matters related to ESG reported at BoD (As of July 2021)	Times	1			
Remuneration of highest-paid personnel, employee in organization* (domestic, overseas)	Total annual remuneration to highest-paid personnel in organization (A)	KRW	77,986,027			
	Median of total annual remuneration of all employees (B)	KRW	9,572,990			
	(A)/(B)	%	8.1			
Collective agreement (domestic)	Labor union membership	Total personnel	Person	2,098	1,979	1,990
		Total applicable personnel	Person	3,422	3,361	2,888
		Proportion	%	61.30	58.90	68.90
Collective agreement (China)	Labor union membership	Total personnel	Person	9,688	8,787	6,817
		Total applicable personnel	Person	10,025	9,306	7,765
		Proportion	%	96.60	94.40	87.80

*Based on domestic labor expenses in December (Uniform standard under business report)

Stakeholder participation

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
	Respecting human rights and 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

Jan Carlson, Manager, Volvo

Risk and opportunity on EU Market

From Volvo's perspective, what are the risks and opportunities on carbon neutral and climate policy in automobile market, particularly in Europe?

With diverse regulations coming in effect recently in Europe, it's becoming more important to pay attention to, particularly, policies related to carbon footprint, reuse, recycling, etc. In terms of the nature of the automobile industry, in the very near future, these policies could serve as critical impacts on its business territory. To build up fundamental capacity to deal with them, I can see that plenty of companies are doing large investment within Low CO2 footprint for reducing its emissions from their own sites and outside sourcing. This creates new risks and opportunities together globally and those who do well in the transition will take up a leading position.

ESG Policy for Supply Chain

As the OEM of LG Energy Solution, what do you expect on our ESG policy for supply chain management?

Open and transparent ESG solution will be key for future collaboration and to fulfill requirements like new EU regulations. With sense of responsibilities, Volvo Cars spend and invest large amounts to cope with these issues. Volvo Cars expect that our main suppliers take responsibility for their supply chain. To be more transparent and pro-active, I recommend having an open dialogue about risk and actions. No one is perfect but together we can improve the situation.

Lee Jun-wook, Executive Director, Solus Advanced Materials

Opinions on the Importance of Managing Supply Chain

There is growing importance of managing the overall value chain in the battery industry. As such, responsible sourcing and supply chain management are expected to become ever more important. We'd like to hear your valuable opinion, explanation on the preparation so far, and any plans ahead regarding this.

Solus Advanced Materials is well aware of the shift of paradigms and the importance, represented by ESG. We are the only copper foil manufacturer that has manufacturing bases in Europe, and we comply with Europe's strict environmental standards. In particular, we produce copper foil by using recycled scrap copper in Europe, and we manage based on the traceability-related regulations defined by the EU.

Creating a Sound Supply Chain Ecosystem

What do you hope from LG Energy Solution to create a sound structure and strengthen competitiveness in the battery industry? And please share with us your views on what contributions we can make.

As a member of RE100, LG Energy Solution is leading the expansion of the use of renewable energy and reduction of carbon emissions, but for the expansion of performance in ESG sector, active collaboration with suppliers needs to follow. Therefore, I hope our interactive communication is activated by not only supporting the suppliers' ESG management activity evaluation and building a management system, but also sharing the policies that LG Energy Solution is carrying out. We are also setting up our internal management standards and roadmap to achieve carbon neutrality. We will periodically share the progress with LG Energy Solution and contribute to building a low carbon battery industry.

Importance of ESG Evaluation

Recently, the society-wide interest in ESG is increasing, and ESG assessment agencies and the standards are diversifying. We'd like to ask your valuable opinion on proper responsive strategy to this.

The increase of interest in ESG is a positive change, but it is somewhat worrisome that companies are focusing only on ESG evaluation scores.

The end consumers of ESG assessment results are the institutional investors. Because the market perspective on ESG assessment could also mean institutional investors' perspective, we need to take a keen eye on how they use the non-financial information for their investment decisions.

Non-financial information related to ESG is difficult to accurately quantify, and there is insufficiency in standardized information disclosure. And the scores and grades may vary depending on the assessing institution because of the difference in important issues in each industry.

Therefore, investors focus on selecting companies with high investment reliability through comparative analysis between companies in the same industry. In addition, if a company's ESG management is insufficient, it is expected that institutional investors will continue to seek improvement through direct communication with the company.

In order to take leadership in ESG, companies must actively engage in a variety of activities without focusing on ESG evaluations.

It will be important to understand the nature of their industry and to more systematically establish company-wide policies, goals, and response procedures, focusing on important issues from a sustainability management perspective.

Major ESG Issues in the Future

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

Instead of dealing with all the ESG issues from the start, we need to take a gradual and selective approach depending on the level of importance. There may be a lot of important matters at hand, but I'd like to pick out climate action, work-site environment and human rights issue regarding safety management, and supply chain management as the most important ESG issues.

Supply Chain Management(SCM) especially, is one of the difficult ESG matters. Because it's very ambiguous to set evaluation standard and we need a active cooperation between companies.

SCM does not mean you have to take direct control and manage the ESG of all suppliers, but reflecting the management system and the status of major ESG issues, such as environment and labor, when selecting suppliers, and monitoring and directing them. This requires setting up standards and procedures to analyze the supply chain policies of major clients at the upper rankings of the value chain, and comprehensively leading the suppliers in the lower rankings.

Meanwhile, as many countries have declared carbon neutrality in accordance to the Paris Agreement, it is expected that the climate change information disclosure system based on TCFD will become a global standard.

Rather than considering such improvement of ESG management system as cost factors, we need to recognize them as investment to increase corporate value on the mid- to long-term.

We expect that effective ESG investment will further solidify LG Energy Solution's position in the global market.

ESG Governance Innovation

Innovating the governance is indispensable to a company's ESG management but still, many companies are still struggling with governance restructuring. We'd like your kind explanation on what the key matters to restructuring governance are, and what we should be aware of.

Governance is a basic decision making system for companies' long term sustainable growth. The Board of Directors, which is the highest decision-making organization executive directors that implement the Board of Directors' decisions, and protection of shareholder rights are three core elements of governance restructuring. This requires transparent decision-making system of global enterprise level. Listed companies should introduce governance code and get prepared to comply with this on the long term. They should also clarify the areas that can be improved on the short term, and long term, and transparently communicate the process with investors. Sustainable capital productivity, inheritance issues, company's response to shareholder involvement, shareholder proposals, trade with stakeholders, conflict of interests, shareholder meetings, and other overall inspections on governance structure issues and countermeasures to the results are required. Plans for such improvements in governance need to be made in accordance with the specific circumstances of each company.

Future of ESG and Preparedness of an Enterprise in Investment Sector

The impact of investors on ESG is growing day after day. We'd like to ask your advice on what enterprises need to prepare in the light of the investor perspectives on ESG and the ESG future trends in the investment sector.

It is a global trend that institutional investors are encompassing ESG as the key element of fiduciary duty. When trying to identify a company's overall ESG risks, for example, you want to define climate risk as a concrete investment risk that you will face, and then try to figure out the level of such risk and whether you have enough capabilities and precise plan to deal with it. So, enterprises need to set up mid- to long-term goals in diverse fields of ESG, and confirm and implement very detailed strategies to accomplish the goals. Here, it is important to manage the goals, strategies and implementation process as data that can be verified.

The recent ESG investments are meshed with the introduction of listed companies' governance structure code and institutional investors' stewardship code, and are heading to shareholder engagement and proxy voting. This is what I think is the big difference from the socially responsible investment in the past. Since the 2020 pandemic, almost all public institutional investors all around the world have defined environment (E) as the core value. In Korea, the social (S) elements, such as labor issues, are also emphasized. When the market enters a different phase from now, for example depression and stagnation, governance (G) will probably be emphasized as the major value. Therefore, I believe companies need to work on their expertise in each of the ESG elements on the long term and accumulate relevant data.

AI Data Analysis of Non-financial Data

As data in the non-financial sectors started accumulating all over the world, the introduction of artificial intelligence (AI) to analyze such data is spreading. Please share your views on the latest trends, advantages and how companies could utilize such data.

Introducing the AI means that they are going to analyze it with objective data. In particular, ESG investment is based on ESG assessment. The recent trend shows a shift from ESG assessment to ESG analysis. In other words, we are introducing data analysis technologies, such as AI, to non-financial information to quantitatively assess what has been qualitatively assessed. Therefore, companies need to more actively disclose their ESG information, and disclosing in a uniform and consistent manner is more important than anything. To this end, we need to build a system capable of managing all processes of ESG management into data, and make efforts to turn various fields of ESG into business opportunities by systematically managing ESG data and identifying risks.

Corporate Management and Human Rights

What are the notable human rights-related issues in corporate management, and how should companies view this and what preparations might they need?

As fatal accidents from industrial disasters are increasing recently, stakeholders are putting more emphasis on occupational safety and health issues. Major ESG assessment initiatives commonly require information on violation of the occupational safety and health laws in the social (S) sector, and related internal systems. And it has long been pointed out that battery manufacturers should produce batteries in an ethical and sustainable way. As such, I think LG Energy Solution needs to build a compliance program, which continuously monitors not only human rights but also occupational safety issues, applicable to suppliers as well.

In addition, for a global company, it seems response to diversity and gender issue is growing more important in terms of employment and treatment. In Korea, we're seeing movement towards operating an organization to foster female talents in the company, and we expect to see more demands to recruit people with disability and seniors. Therefore, the company needs to be ready for the change.

Latest Legislative Trends

In various fields, there are rapid changes in awareness to human rights, and the need for new legislation is also accelerating. Please share with us your views on what companies should focus on and your expectation on LG Energy Solution.

As the legislation for obligatory due diligence of human rights, environment and governance is presented in the EU, all conglomerates in EU will be obligated to perform due diligence on their own value chain. This can cause indirect impacts on companies that supply to multinational companies in the EU. Although it might take some time for this legislation to take effect, but in Germany, the Supply Chain Act, which imposes direct suppliers the obligation to due diligence, has been passed. And the UK, France and Netherlands have introduced laws of different forms of obligating human rights due diligence; these all mean that we are in a situation that requires preemptive response.

In addition, recently, the Ministry of Justice made a pre-announcement of legislation of "Framework Act on Human Rights Policy" and announced in detail the plans to establish the National Human Rights Policy Committee. According to this, the state and local governments will provide systems to prevent human rights violation of companies, and companies will be obligated to provide measures to relief of rights of human rights violation victims from business activities. As such, companies will be required to put more efforts to prevent human rights violation and inspected by means of due diligence, etc.

LG Energy Solution is the first company to join RE100 and EV100 in Korea's battery industry, and is taking preemptive response to various ESG issues for responsible sourcing of minerals and supply chain management. From raw materials to end product, we would need to establish a transparent inspection system to manage various issues, such as environment, human rights and anti-corruption. In terms of human rights sector, instead of acting passively to regulations, setting a preemptive system to be a global leading company for human rights management.

There's growing social interest on RE100 (Renewable Electricity 100%) recently. Please tell us about the significance of joining RE100 and compliance to ESG management.

RE100 is "an initiative of globally influential companies that have pledged their commitment to 100% conversion to renewable electricity to cooperate to increase the supply and demand of renewable energy."

Here, the keyword is "globally influential companies," because this is the first prerequisite to joining RE100. But why does RE100 only look for "globally influential companies" to join its initiative? I think you'll be guided to the essence of RE100 in search for the answer.

When global giants with influence over the world mandate RE100, this mandate itself can send a powerful signal to the markets and governments. In other words, supply and demand for renewable energy will expand in the markets, and governments will introduce new policies so that other companies can achieve RE100 goals. This is precisely why large influential companies are taking the lead of RE100, and what's enabling this is "business leadership" of influential companies.

Companies' business leadership proves its worth during the implementation RE100, rather than at the time of declaring it. Whether the implementation process of RE100 complies with the intention of RE100 or ESG management is crucial.

LG Energy Solution became the 300th company to join RE100 in April 2021. Please share with us your advice on what kind of business leadership LG Energy Solution should perform.

If you look at the membership requirements of RE100, members are required to convert electricity use into renewable energy in full by 2050. As a leader of eco-friendly energy, LG Energy Solution announced that they will convert the electricity use from all business sites worldwide into renewable energy by 2030, which is 20 years ahead of others. This is an exemplary case of displaying climate leadership in the global stage.

By establishing the RE100 strategy reflecting LG Energy Solution's ESG management philosophy and exerting climate leadership so that companies in the supply chain use 100% renewable energy, the new business environment in the battery industry field will be made in the hands of LG Energy Solution. I believe this is what "business leadership" of an influential company means, and this business leadership will build a "new world order."

Materiality Assessment

Materiality Assessment Process

LG Energy Solution has identified major sustainability management issues by comprehensively analyzing the domestic and overseas industrial environments and global ESG initiatives and listening to stakeholder opinions through an online survey. To this end, we have selected major sustainability management issues that need intensive management by building a sustainability management issue pool and considering business impact and stakeholder interests. In addition, we have selected the final reporting issues through validation of experts and the management. (Conducted in March - April 2021).

Step 1. Identification of Issues

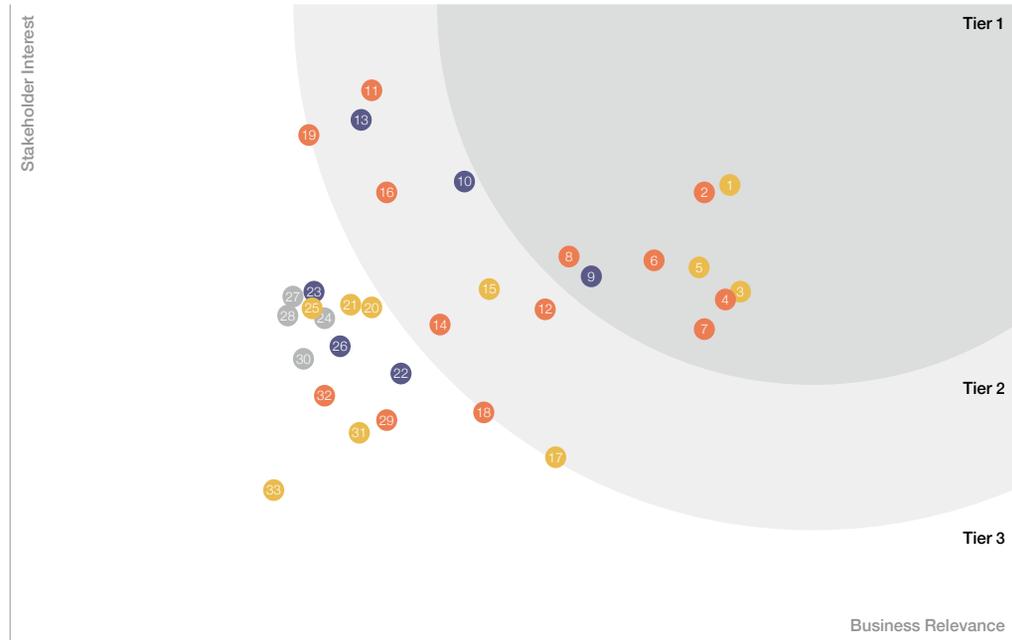
Putting together the major issue pool	Reviewing the major issue pool	2020 LG Energy Solution Major Issue Pool
Analyzing Global ESG disclosure/ Assessment Initiatives <ul style="list-style-type: none"> Identifying major items of GRI/MSCI/ CSA/CGS 	Media Analysis <ul style="list-style-type: none"> Review of LG Energy Solution media article issues in 2020 Benchmarking Analysis <ul style="list-style-type: none"> Review of major issue pool of major BM enterprises 	Identifying a pool of the 33 final major issues

Step 2. Prioritization of Major Issues

Stakeholder Survey	Selecting Major Issues	
Survey Overview <ul style="list-style-type: none"> Materiality evaluation of the 33 major issues selected Survey targets: Major stakeholders of LG Energy Solution 	X-axis: Business Relevance <ul style="list-style-type: none"> Media analysis Employee survey 	Y-axis: Stakeholder Interest <ul style="list-style-type: none"> Stakeholder survey Benchmarking analysis result

Step 3. Validation

Sustainable Management Expert Review	Internal Consultation of LG Energy Solution	
Review of Major Issue Data <ul style="list-style-type: none"> Review of data regarding the results of media analysis, surveys, and benchmarking analysis 	Classification of Importance of Major Issue and Confirmation of Assessment Result <ul style="list-style-type: none"> Review of logic to classification of major issues Confirmation of materiality assessment results 	Reflecting Internal Opinions and Feedbacks Based on the Survey Results



Sustainability Management Issue Pool of LG Energy Solution

Environment Society Economy Governance

Tier 1	Tier 2	Tier 3
<ul style="list-style-type: none"> 1 Reducing GHG emissions 2 Responsible supply chain management 3 Building a climate response system 4 Occupational safety and health management 5 Using recycled raw materials 6 Operating reasonable HR evaluation and compensation policy 7 Building capacity of employees and nurturing industrial experts 8 Protecting human rights of employees and suppliers 9 Developing products with consideration of environmental/social impact 	<ul style="list-style-type: none"> 10 Business innovation 11 Strengthening ethics management activities 12 Strengthening protection of customer information 13 Generating economic achievements 14 Enhancing customer satisfaction 15 Strengthening control of hazardous/harmful substances 16 Establishing an employee-friendly corporate culture 17 Reducing the amount of wastes 18 Sourcing and managing raw ingredients in a responsible manner 19 Establishing a social commitment strategy and managing performance 	<ul style="list-style-type: none"> 20 Strengthening control of air pollutants 21 Establishing an environmental management system 22 Strengthening product branding 23 Integrating the management of financial and non-financial risks 24 Disclosure of ESG performance and strengthening communication 25 Water-related risk management 26 Transparent tax payment and disclosure 27 Forming and operating a responsible board of directors (BOD) 28 Strengthening shareholder and governance responsibility 29 Maintaining cooperative company-union ties 30 Operating an effective remuneration system for the management 31 Protecting biodiversity in the vicinity of business sites 32 Increasing the wage standard/chance to promote regarding local recruits at overseas business sites 33 Reducing the use of water

Status of Reflecting the Materiality Assessment Results

Table of Content	Issue	Related GRI Index (No.)	Page	
II. ESG Strategy Climate Action & Circular Economy	1	Reduction of GHG emissions	Energy (302) Emission (305)	p.34 p.34
	3	Building a climate response system	-	p.32-36
	5	Using recycled raw materials	Raw materials (301)	p.37
	II. ESG Strategy Human Value Management	6	Operating reasonable HR evaluation and compensation policy	-
7		Building capacity of employees and nurturing industrial experts	Training and education (404)	p.42-43
8		Protecting human rights of employees at LG Energy Solution and business partners	Non-discrimination (406)	p.40-41
			Child labor (408)	p.40-41
	Forced or compulsory labor (409)		p.40-42	
		Human rights assessment (412)	p.40-41	
II. ESG Strategy Advanced EH&S	4	Strengthening business site safety and health management	Occupational health and safety (403)	p.49-53
	9	Developing products with consideration of environmental/social impact	Energy (302)	p.79-81
II. ESG Strategy Responsible & Impactful Business	2	Responsible supply chain management	Supplier environmental assessment (308)	p.56-59
			Supplier social assessment (414)	p.56-59

GRI Standards Index

Universal Standards (GRI 100)

Category	Index	Description	Page
Organization profile	102-1	Name of the organization	p.14
	102-2	Activities, brands, products and services	p.14
	102-3	Location of headquarters	p.14
	102-4	Business region	p.14
	102-5	Ownership and legal form	Business report p.16
	102-6	Markets served	p.14-15
	102-7	Scale of the organization	p.14-15
	102-8	Information on employees and other workers	p.93-95
	102-9	Supply chain	p.58-59
	102-10	Significant changes to the organization and its supply chain	p.14
	102-11	Precautionary principle or approach	p.85-87
	102-12	External initiatives	p.72
	102-13	Membership of associations	p.72
Strategy	102-14	Statement from senior decision-maker	p.8-13
	102-15	Key impact, crisis and opportunity	p.28-29
Ethics and Integrity	102-16	Values, principles, standards and code of conduct	p.83
	102-17	Ethics-related guidance and grievance mechanism	p.41
Governance	102-18	Governance structure	p.66-69
	102-19	Delegation of authority on economic, environmental and social topic	p.66
	102-20	Executive's responsibility to economic, environmental and social topic	p.10-13
	102-21	Stakeholder's participation in economic, environmental and social topic	p.97
	102-22	Composition of the highest governance body and subcommittees	p.77-78
	102-23	Chairperson of the highest governance body	p.77-78
	102-24	Nomination and appointment of the highest governance body	p.77-78
	102-25	Prevention of conflict of interests	p.77-78
	102-26	Roles of the highest governance body in establishing the goal, value and strategy	p.77-78
	102-27	Strengthening collective knowledge of the highest governance body	p.77
	102-28	Evaluating the highest governance body's performance	p.78
	102-29	Identifying and managing the economic, environmental and social impact of the highest governance body	p.67
	102-30	Effectiveness of risk management process	p.85-86
	102-31	Review of economic, environmental and social topics	p.66
	102-32	Highest governance body's role in sustainability reporting	p.66
	102-33	Reporting process of important matters to the highest governance body	p.77-78
	102-34	Nature, quantity and resolving mechanism of important matters	p.78
102-35	Remuneration policies	p.78	
102-36	Process for determining remuneration	p.78	
102-37	Stakeholders' involvement in remuneration	p.78	
102-38	Annual total compensation ratio	p.96	
102-39	Percentage increase in annual total compensation ratio	-	

Category	Index	Description	Page
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	102-42	Identifying and selecting stakeholders	p.97
	102-43	Approach to stakeholder engagement	p.97
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Report Customs	102-45	Entities included in the consolidated financial statements	Business report p.3
	102-46	Determining report content and topic boundaries	p.2
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	102-48	Restatements of information	p.2
	102-49	Changes in reporting	p.2
	102-50	Reporting period	p.2
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	102-56	External assurance	p.112
	Business approach	103-1	Explanation of the material topic and its boundary
103-2		The management approach and its components	p.8-9
103-3		Evaluation of the management approach	p.66-67

Topic-specific Standards

Economic achievement (GRI 200)

Category	Index	Description	Page
Anti-corruption	205-1	Operations assessed for risks related to corruption	p.91
	205-2	Communicating and training on anti-corruption policy and procedure	p.91
	205-3	Confirmed incidents of corruption and actions taken	p.91
Anti-competition	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	p.91

Environmental achievement (GRI 300)

Category	Index	Description	Page
Raw ingredient	301-1	Materials used by weight or volume	-
	301-2	Recycled input materials used	-
	301-3	Reclaimed products and their packaging materials	-
Energy	302-1	Energy consumption within the organization	p.92
	301-2	Energy consumption outside the organization	p.92
	302-3	Energy intensity	p.92
	302-4	Reduction of energy consumption	p.34-36
	302-5	Energy saving in products and services	p.34-36
Emissions	305-1	Direct (Scope 1) GHG emissions	p.92
	305-2	Indirect (Scope 2) GHG emissions	p.92
	305-3	Other indirect (Scope 3) GHG emissions	-
	305-4	GHG emissions intensity	p.32
	305-5	Reduction of GHG emissions	p.32-34
Supply chain's environmental impact evaluation	308-1	Number of suppliers evaluated for environmental impact, and those considered to have critical negative impact and therefore taken action	p.57-58

Social achievement (GRI 400)

Category	Index	Description	Page
Occupational safety and health (OSH)	403-1	OHS management system	p.47
	403-2	Procedures and investigation of occupational risk evaluation	p.49-53
	403-3	Occupational health service (identifying and eliminating risk, how to use)	p.49-53
	403-4	Worker participation and communication of OSH	p.49-53
	403-5	Education and training on OSH	p.49-53
	403-6	Worker health promotion (medical and health service)	p.49-53
	403-7	OSH risk prevention and alleviation in business partners	p.49-53
	403-8	Number of workers under OSH management system	p.95
	403-9	Number and ratio of work-related injuries among employees, etc.	p.95
	403-10	Number and ratio of work-related diseases among employees, etc.	p.95
Training and education	404-1	Employee education and training hours	p.42
	404-2	Program types, application scope and retiree support	-
	404-3	Performance evaluation of employees and examination of career development	p.42-43
Anti-discrimination	406-1	Number of incidents of discrimination and corrective actions taken	p.95
Child labor	408-1	Measures to eradicate child labor	p.56-59
Forced labor	409-1	Measures to eradicate forced labor	p.56-59
Human rights evaluation	412-1	Number and ratio of business sites subject to human rights impact evaluation	p.40-41
	412-2	Ratio of employees who have been trained on human rights policy and procedures	p.41
	412-3	Number of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	p.41
Supply chain's social impact	414-1	Number of new business partners that have evaluated social impact	p.57-58
	414-2	Number of business partners that have evaluated social impact or terminated business ties after revealing negative impact	p.57-58
Personal information	418-1	Number of substantiated complaints concerning breaches of customer privacy and losses of customer data	p.95

TCFD Index

Category	Recommendations of TCFD	LG Energy Solution TCFD Implementation Status
Governance	a) Explanation on BOD activities regarding climate change risk and opportunity	p.32
	b) Explanation on management's roles in evaluating and managing climate change risk and opportunity	p.32
Strategy	a) Explanation on climate change risk and opportunity in short-, mid-, and long-term perspectives	p.33
	b) Explanation of climate change risk and opportunity on business, strategy and finance	p.33
	c) Explanation of strategies, including the Below 2°C scenario and various climate change-related scenarios	p.32
Risk Control	a) Explanation of organizational process that identifies and evaluates climate change risk	p.32
	b) Explanation of organizational process that controls climate change risk	p.32
Indices and Goals	b) Disclosure of Scope 1, Scope 2, and Scope 3 (if applicable) emissions	p.92
	c) Explanation of climate change risk and opportunity, and goals for performance management	p.33

VRF SASB Standards Index

SASB Topic	Code	Category	Description	LG Energy Solution's Actions
Energy Management	RR-FC-130a.1	Quantitative	(1) Total energy consumed	p.92
			(2) Percentage grid electricity	-
			(3) Percentage renewable	p.92
Workforce Health & Safety	RR-FC-320a.1	Quantitative	(1) Total recordable fatality rate including incidents without loss of service	p.95 (Managed by substituting with LTIR)
		Quantitative	(2) Total recordable fatality including incidents without loss of service	p.95 (Managed by substituting with LTIR)
	RR-FC-320a.2	Discussion 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	Quantitative	Average storage capacity of batteries, by product application and technology type	Based on cylindrical 21700 (for electric operation): 270 Wh/kg * Refer to a separate ESS sheet
	RR-FC-410a.3	Quantitative	Average battery efficiency as coulombic efficiency, by product application and technology type	Based on cylindrical 21700 (for electric operation): Over 99%
	RR-FC-410a.5	Quantitative	Average operating lifetime of batteries, by product application and technology type	Based on cylindrical 21700 (for electric operation): used for 1,000 times until 80% lifetime
Product End-of-Life Management	RR-FC-410b.1	Quantitative	Percentage of products sold that are recyclable or reusable	100%
	RR-FC-410b.2	Quantitative	Weight of end-of-life material recovered, percentage recycled	Currently not responsible for recovering used batteries
	RR-FC-410b.2	Quantitative	Percentage of end-of-life material recycled	Currently not responsible for recovering used batteries
	RR-FC-410b.3	Discussion and Analysis	Description of approach to manage use, reclamation, and disposal of hazardous materials	p.47
Materials Sourcing	RR-FC-440a.1	Discussion and Analysis	Description of the management of risks associated with the use of critical materials	p.58
Production Volume	RR-FC-000.A	Quantitative	Total number of batteries sold	1,510,794,685EA*
	RR-FC-000.B	Quantitative	Total storage capacity of batteries sold	40,332MWh**

* Physical shape standard for sales (Simple sum of cell, module, pack, container)

** Excluding small cells

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
	<ul style="list-style-type: none"> • “Companion Plant Movement” to help flower farms 	p.61
	<ul style="list-style-type: none"> • Youth health & education projects and environment protection activities • Improving the environment of communal homes for children 	p.61, 62
	<ul style="list-style-type: none"> • Talent fostering support project 	p.62
	<ul style="list-style-type: none"> • Operating girl scouts short-term vocational training course 	p.61
	<ul style="list-style-type: none"> • Hope Green Project 	p.60
	<ul style="list-style-type: none"> • Supporting activities of suppliers to reduce GHG • Creating jobs for the persons with disabilities by operating a subsidiary ‘Areamnuri’ 	p.36, 41
	<ul style="list-style-type: none"> • Installing EV charging stations at major business sites • R&D of new technology/products for future growth, such as next-generation cells 	p.36, 79-81
	<ul style="list-style-type: none"> • Establishing and applying global human rights and labor principles • Operating non-discriminative talent recruiting policy 	p.40-43
	<ul style="list-style-type: none"> • Utilizing renewable energy during battery production 	p.32
	<ul style="list-style-type: none"> • Setting up GHG reduction goal • Establishing a climate change decision-making system • Establishing/operating a global energy management system 	p.32-37
	<ul style="list-style-type: none"> • Conducting compliance education for employees 	p.68
	<ul style="list-style-type: none"> • Joining RMI, RE100, EV100 Initiatives 	p.32-33, 72

Introduction

Korea Management Registrar (KMR) was commissioned by LG Energy Solution to conduct an independent assurance of its LG Energy Solution 2020 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
- GRI 301: Materials
- GRI 302: Energy
- GRI 305: Emissions
- GRI 403: Occupational Health and Safety
- GRI 404: Training and Education
- GRI 406: Non-Discrimination
- GRI 408: Child Labor
- GRI 409: Forced or Compulsory Labor
- GRI 414: Supplier Social Assessment

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. We recommend that it develop models for measuring social values considering its business characteristics to increase the effectiveness of CSR activities and continuously enhance the sustainability management system.

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 2021 Seoul, Korea



SRV1000
Sustainability Committee Assurance



AA1000
Licensed Report
000-129/V3-CLXHP

CEO

E. J. Hwang

Group Membership Status

Title

Korea Battery Industry Association
Korea Chamber of Commerce and Industry
Korea International Trade Association
Korea Chemicals Management Association
Korea Industrial Technology Association
Hanyang University Battery Center
Consultative Group of Leaders in Innopolis Daedeok
Consortium of CERT
Korea Special Library Association (KSLA)
Korean Nurses Association
Innopolis Daedeok Fire Safety Consultative Group
Korea Association for Radiation Application
Korea Industrial Safety Association
Innopolis Daedeok Safety Consultative Group
Korea Environmental Preservation Association in Daejeon and Chungnam
Korea Environmental Engineers Association in Daejeon, Sejong and Chungnam
EBA (European Battery Alliance)
RECHARGE (The Advanced Rechargeable & Lithium Battery Association)
PRBA (The Rechargeable Battery Association)

This report tried to avoid spot color printing and coating process in order to minimize environmental pollution and waste of resources during the process of printing. It lessened the use of toxic ingredients by using eco-friendly soy ink, and 100% FSC® recycled pulp is also used.



