

2020 ESG Factbook



ESG Material Indicators

LG Chem established its sustainability vision and strategy in 2019, which consists of nine strategic areas to dedicate our commitment for sustainability. In 2020, LG Chem declared the mid- to long-term goals, including 'Carbon Neutral Growth', focusing on five top priority areas among our strategic areas.

LG Chem prioritizes key indicators that need to be managed first from an ESG perspective in order to communicate more actively with various stakeholders and strengthen its business competitiveness.

Through the analysis of indicators from global standards and indices agencies, and the same industry's peer companies, 120 ESG indicators were integrated into 30 indicators and 20 material indicators were decided as material indicators through a materiality assessment. Furthermore, based on the concept of Stakeholder Capitalism Metrics proposed by the World Economic Forum (WEF), the material indicators were classified into four categories: Environment, Social and Governance (ESG) and Growth. We would like to disclose information about LG Chem's approaches and performances on ESG and Growth based on these material indicators in the future.

In the case of approaches and performances for ESG, the Carbon Disclosure Project (CDP), the Climate Disclosure Standards Board (CDSB), the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), and the Sustainability Accounting Standards Board (SASB) jointly proposed Sustainability-related Financial Disclosure framework, and internal management and external disclosure of ESG factors will be enhanced based on this framework.

ESG Indicators

Category	Sustainability Areas	Indicators
E	Climate Action	GHG Emission Reduction
	Water Management	Water Withdrawal, Consumption and Discharge
	Renewable Energy	Energy Consumption Reduction
	Environment Protection	Air Pollutants Reduction
	Responsible Products	Product Responsibility and Chemical Stewardship
	Environment Protection	Waste Emission and Recycling
	Environment Protection	Water Pollutants Reduction
	Circular Economy	Reused and Recycled Materials
	Safety & Wellness	Employee and Process EH&S
S	Human Rights & Diversity	Talent Attraction, Training and Employee Engagement
	Human Rights & Diversity	Employee Diversity, Equity and Inclusion
	Responsible Supply Chain	Supply Chain Sustainability
	Human Rights & Diversity	Human and Labor Rights
	New Areas	Community Engagement
G	New Areas	Corporate Governance
	New Areas	Corporate Ethics and Behavior
	New Areas	Cyber and Information Security
	New Areas	Public Policy and Regulation
Growth	Responsible Products	Sustainable Solutions
	Responsible Products	Customer Satisfaction

Data Coverage

This document includes LG Chem's performances from 2020 calendar year and covers LG Chem's global entities of which we have operational control, including our headquarters, domestic and global production sites, and R&D campuses. For financial statements, data from consolidated financial statements were applied, and the scope was separately indicated if reporting boundaries were different.

※ Data from business sites where the withdrawal have been decided, LG Energy Solution, and FarmHannong are excluded.

GHG and Energy

LG Chem has organized a Sustainability Strategy team under the CEO in 2020 to support and make the core strategic decisions related to corporate sustainability, set the mid- to long-term goals, and promote the implementation tasks. Sustainability-related issues are reported and discussed as a major agenda at monthly management meetings where the company's top executives gather, among which climate change-related issues are discussed as top priorities. In order to do regular monitoring, we periodically check and make decisions on sustainability issues, including climate change, at corporate staff meetings, which are weekly executive-level meetings attended by CEOs and corporate Staff's key executives. In addition, the Energy Committee, consisting of CEOs and plant leaders, is operated annually to check greenhouse gas/energy related action items and make decisions on future plans and key initiatives. With the establishment of the "ESG Committee" within the board, regular and systematic monitoring of major ESG indicators in responding to climate change, such as greenhouse gases and energy usage, will be conducted around the board.

The risks posed by climate change are largely due to increased operating costs in response to existing regulations such as the Emission Trading Scheme and new regulations such as Carbon Border Adjustment Mechanism. In addition, there is a risk of weakening the competitiveness of existing high-carbon products due to changes in market and customer preferences. Also, risks of physical loss to assets and supply chains due to climate change such as heat waves/storms/sea level rise are identified. On the other hand, we recognize opportunities to strengthen market competitiveness and increase sales through the development of low-carbon products, and to reduce operating costs by the use of low-carbon energy.

LG Chem has actively responded to climate change risks and discovered business opportunities through its portfolio of EV and ESS batteries before LG Energy Solution split, and completed spinoff of LG Energy Solution in 2020 to expand its business. Even after the spinoff, we are building and fostering a business portfolio focusing on eco-friendly materials (PCR-materials, bio-materials, etc.) and battery materials (cathode materials, etc.) in order to respond to risks arising from climate change and create business opportunities. In addition to transforming the business portfolio, domestic and foreign business sites are planning to use 100% renewable energy, and overseas sites are planning to use RE100 by 2030 and domestic sites are by 2050. Furthermore, we are actively investing in R&D that can reduce greenhouse gases from a mid- to long-term perspective such as securing carbon capture and utilization (CCU) technology, developing new NCC pyrolysis processes, and developing low carbon and eco-friendly process technologies.

LG Chem has declared its mid- to long-term goals of Carbon Neutral Growth, which maintains greenhouse gas emission levels in 2019 by 2050, and RE100 (Renewable Energy 100%) which use 100% renewable energy by 2050. We are internally considering raising our mid- to long-term goals as the international community has agreed to respond to climate change by focusing on "Net-zero."

[GHG Emissions]

GHG Emissions	Units	Scope	2018	2019	2020
Scope 1 Emissions	tCO2-eq	Korea	5,161,403	5,260,041	5,193,936
Scope 2 Emissions			2,584,687	2,879,992	2,864,611
Scope 1+2 Emissions			7,746,089	8,140,033	8,058,547
Scope 1 Emissions		excl. Korea	155,946	145,567	195,276
Scope 2 Emissions			1,196,537	1,224,411	1,265,960
Scope 1+2 Emissions			1,352,483	1,369,978	1,461,236
Scope 1 Emissions		Global	5,317,349	5,405,608	5,389,212
Scope 2 Emissions			3,781,224	4,104,403	4,130,571
Scope 1+2 Emissions			9,098,572	9,510,011	9,519,783
Scope 1 Emissions Intensity			0.2593	0.2845	0.3043
Scope 2 Emissions Intensity			0.1844	0.2160	0.2332
Scope 1+2 Emissions Intensity			0.4437	0.5005	0.5374
Scope 3 Emissions	tCO2-eq	Korea	1,126,063	1,015,464	1,267,369
- Purchased goods and services			520,307	494,538	517,985
- Capital goods (upstream)			65	82	58
- Fuel and energy related activities			104,848	122,922	121,904
- Upstream transportation and distribution			283,810	151,406	318,438
- Waste generated in operations (composting, incinerating)			16,825	19,113	19,679
- Business travel			3,130	2,767	2,265
- Employee commuting			10,528	7,987	4,737
- Upstream leased assets			N/A	N/A	N/A
- Downstream transportation and distribution			N/A	N/A	N/A
- Processing of sold products			N/A	N/A	N/A
- Use of sold products			N/A	N/A	N/A
- End-of-life treatment of sold products			N/A	N/A	N/A
- Downstream leased assets			N/A	N/A	N/A
- Franchises			N/A	N/A	N/A
- Investments			180,268	210,271	276,686
- Other upstream			6,282	6,379	5,616
- Other downstream	N/A	N/A	N/A		

1) Emissions from Korea were disclosed based on the greenhouse gas statements submitted in accordance with ETS, including emissions from headquarters and sales offices

[Energy Use]

Energy Consumption	Units	Scope	2018	2019	2020	
Direct Energy Use	TJ	Korea	96,624	96,964	95,033	
Indirect Energy Use			57,149	52,929	47,777	
Direct Energy Use		excl. Korea	988	2,532	3,483	
Indirect Energy Use			5,923	3,451	3,390	
Direct Energy Use		TJ / KRW million	Global	97,612	99,496	98,517
Indirect Energy Use				63,072	56,379	51,166
Direct Energy Use Intensity	0.0048			0.0052	0.0056	
Indirect Energy Use Intensity	0.0031			0.0030	0.0029	
Total Energy Use	TJ			160,683	155,875	149,683
Total Energy Use Intensity	TJ / KRW million			0.0077	0.0081	0.0084
Total Renewable Energy Use	GJ		50,727	58,893	63,371	

1) In the case of renewable energy use, it is expected to increase by utilizing overseas power purchase agreements (PPA) and domestic green premium system as of 2021.

E Water, Pollutants, Waste

EH&S divisions and the EHS departments from production sites monitors and checks the current status of legal risks conducting periodic voluntary inspections of the Environment, Health & Safety laws and regulations and identifying improvement items.

In particular, in the case of items subject to legal management, regular monitoring is performed to check whether the management standards are met in real time, and LG Chem is continuously expanding the scope to promote preemptive improvement to areas not subject to regulation.

For business sites newly established after 2020, landfill zero certification is mandatory and it will gradually expand to existing business sites.

In order to establish solid and preemptive EH&S management system, we strive to raise awareness of executives and employees by discovering and sharing best practices related to EH&S through the EH&S Performance Sharing Meetings every year. Outstanding performances are rewarded through the contest.

[Water Consumption]

Water Consumption	Units	Scope	2018	2019	2020
Water Withdrawal	m3	Global	63,364,900	64,410,387	58,698,737
- Ground water			412,247	433,258	411,154
- Surface water			687,961	609,695	-
- Industrial water			58,333,229	59,344,639	54,622,172
- Municipal water			3,878,805	3,959,695	3,650,039
- Rainwater			28,567	12,865	8,722
- etc			24,090	50,236	6,650
Water Withdrawal Intensity			m3 / KRW million	3.0897	3.3895
Total Wastewater	m3		20,598,528	20,481,427	20,536,583
Total Wastewater Recycled			2,007,796	1,785,295	1,910,565
Total Wastewater Recycled	%		10	9	9
Water Discharge	m3		18,590,732	18,696,132	18,626,018
Water Discharge Intensity	m3 / KRW million		0.9065	0.9839	1.0515
Water Consumption	m3		44,774,167	45,714,256	40,072,720
Water Consumption Intensity	m3 / KRW million		2.1832	2.4057	2.2623

1) The amount of water withdrawal from the Water Stress areas in Korea is 1.4%

[Water Pollutants]

Water Pollutants	Units	Scope	2018	2019	2020
COD Emissions	metric tons	Global	845	741	617
COD Emissions Intensity	kg / KRW million		0.0412	0.0390	0.0348
T-N Emissions	metric tons		313	297	217
T-N Emissions Intensity	kg / KRW million		0.0153	0.0156	0.0123
T-P Emissions	metric tons		44	33	28
T-P Emissions Intensity	kg / KRW million		0.0021	0.0017	0.0016

[Air Pollutants]

Air Pollutants	Units	Scope	2018	2019	2020
Dust Emissions	metric tons	Global	168	187	120
Dust Emissions Intensity	kg / KRW million		0.0082	0.0098	0.0068
NOx Emissions	metric tons		1,205	1,172	8,356
NOx Emissions Intensity	kg / KRW million		0.0588	0.0617	0.4717
SOx Emissions	metric tons		281	199	298
SOx Emissions Intensity	kg / KRW million		0.0137	0.0105	0.0168
HAPs Emissions	metric tons		18	87	42
HAPs Emissions Intensity	kg / KRW million		0.0009	0.0046	0.0024
VOCs Emissions	metric tons		234	305	658
VOCs Emissions Intensity	kg / KRW million		0.0114	0.0161	0.0371

1) For the amount of NOx and SOx emission, the Yeosu and Daesan plants have increased their emissions due to the change of the emission calculation method in accordance with the enforcement of the Domestic Air Management Area Act

[Waste]

Waste	Units	Scope	2018	2019	2020
Nonhazardous Waste	metric tons	Global	126,803	134,833	113,191
- Recycling			87,256	85,031	80,510
- Incineration			21,745	26,237	22,652
- Landfill			14,190	20,896	8,121
- etc			3,612	2,669	1,909
Hazardous Waste			130,545	135,442	129,256
- Recycling			103,321	105,771	103,752
- Incineration			25,512	27,242	23,992
- Landfill			1,184	1,898	897
- etc			528	531	615
Total Waste			257,347	270,276	242,448
Total Waste Intensity	metric tons / KRW million		0.0125	0.0142	0.0137
Recycling Rate	%		74%	71%	76%

E Product Responsibility and Chemical Stewardship

Chemical substances information are identified and collected through the product component data securement process led by the Chemical Stewardship Team in the EH&S division. Hazardous substances are internally classified into Levels 1, 2, and 3, and Level 1 and 2 substances are designated as prohibited substances, and the handling of substances against the regulatory requirements is prohibited. To monitor and block the inflow of prohibited substances at the raw materials stage, we conduct material reviews on a daily basis. In the case of handling of high-risk substances, we review the current status and report to senior executives annually.

[Hazardous Substances]

Hazardous Substances	Units	Scope	2018	2019	2020
REACH Substances	%	Global	-	17.74	29.80
SVHC Substances			12.22	8.40	2.39
CMR Substances			25.41	15.89	5.99
Hazardous Substances Risk Assessment			-	5.92	13.59
Product Life-cycle Assessment			67.8	63.6	73.8

1) EU REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals

2) SVHC(Substances of Very High Concern)

3) CMR : Substances classified as carcinogenic, mutagenic or toxic to reproduction (CMR) according to hazard categories 1A and 1B of the Harmonized Classification, Labelling and Packaging (CLP) Regulation

4) Risk Assessment : Percentage of substances registered among all chemical substances

5) For Product LCA, the ratio include internal sales.

E Reused and Recycled Materials

LG Chem is strengthening R&D organizations to develop the technologies about reuse and recycling, expanding business portfolios based on recycled raw materials and building a new growth engine in line with the paradigm shift towards a circular economy. We produce the plastic products based on post-consumer recycled (PCR) materials which have been processed via mechanical recycling. Waste plastics which were previously treated as disposable are now considered as high-value resources that completing circular economy. For the longer term perspective, we are going to secure product competitiveness through chemical recycling technologies. For battery materials, we plan to establish partnerships with companies have metal refining and smelting technologies and incorporate renewable raw materials into our value chain to establish the sustainable supply chain. Business companies of LG Chem discuss the key issues from sustainable business portfolios such as expanding renewable raw materials on monthly management meetings and review the mid to long term business plans through annual strategy planning. We want to play a role as a leading chemical company.

[Reused and Recycled Materials]

Reused and Recycled Materials	Units	Scope	2018	2019	2020
Production Volume Based on Reused and Recycled Materials	metric tons	Global	1,582	2,533	4,186
Reused and Recycled Materials Input			518	827	1,245

S Employee and Process EH&S

Under the philosophy that there is no business to proceed at the expense of EH&S, LG Chem conducts Magnolia Project (M-PJT) to innovate and advance the EH&S management system. Through M-PJT we want to build a preemptive risk management system to become the safest business sites and regularly monitor the status and reports to senior management on monthly management meetings and improve the system.

In particular, we aim to reduce incident indicators by 20% every year, and strengthen our capabilities by organizing teams and recruiting professional manpower, investing in EH&S, and enacting and revising technical guidelines.

[EH&S]

EH&S	Unit	Scope	2019	2020	
Employees					
- Fatality Rate	Rate	Global	-	0.0115	
- TRIR			0.4721	0.6620	
- LTIR			0.1500	0.2590	
Contractors					
- Fatality Rate	Rate		-	0.0055	
- TRIR			0.3067	0.3619	
- LTIR			0.1592	0.1919	
Process					
- PSIC	#			1	5
- PSTIR	Rate		0.0029	0.0140	
Transport Incidents					
- Road	#		2	2	
- Rail			2	1	
- Ship			-	-	
				-	1

※ Three-year data should be provided to improve data comparability, but due to the reorganization of the business companies and the withdrawal of the production sites 2018 data are not applicable to calculate the exact number. 3 years data will be available from next year.

1) Fatality Rate : Total Fatality Cases*200,000 / Total working hours

2) Total Recordable Incident Rate : Total Recordable Incidents*200,000 / Total working hours

3) Lost Time Incident Rate : Total Lost Time Incidents*200,000 / Total working hours

4) Process Safety Total Incident Rate : Process Safety Incident Cases*200,000 / Total working hours

*In the case of process safety incidents, it is based on the internal comprehensive accident index considering injury, fire or explosion, chemical release, economic loss, etc.

5) For total working hours, it is based on full-time workers to work eight hours for 300 days

Supply Chain Management

At LG Chem, the corporate procurement department and procurement departments of business companies take charge of supplier relations to create the sustainable supply chains. To do so, we identify the risks on the supply chains and conduct the supplier assessment based on procurement regulations including supplier management regulations, and also monitor the agreement status of supplier code of conduct.

In addition, CSR assessment results of suppliers reflect on the regular supplier assessment of business companies to monitor the suppliers' risks and management levels and improve the weakness of them. We expect the mutual growth with our suppliers by doing so. Going forward, we strengthen our assessment methodology reflecting our sustainability strategy.

[Supply Chain Management]

Supply Chain Management	Units	Scope	2018	2019	2020
Regular Suppliers	#	Global	1,328	1,288	1,262
- Sustainability evaluation conducted			187	171	291
- High risk suppliers			7	23	8
- On-site audits			6	13	-

1) The standard for regular suppliers shall be based on internal standards, excluding suppliers with lower than three orders per year, and with purchases of less than 300 million KRW (less than 100 million KRW for Life Sciences)

2) In the case of a high-risk suppliers, it means suppliers that results below 65 points according to the CSR evaluation of the suppliers

3) Due to COVID-19 in 2020, an operational guide has been sent to suppliers to substitute the on-site audits, and the evaluation system will be upgraded by reflecting LG Chem's sustainability strategy from 2021.

S Employees

[Employees]

Employees	Units	Scope	2018	2019	2020
Total Employees			18,390	19,025	18,243
- Korea			12,910	13,567	12,551
- China			4,117	4,177	4,394
- Asia Pacific(excl China)			677	694	706
- Europe			245	315	318
- America			441	272	274
Total Employees in Leadership Positions	#	Global	4,559	4,905	4,635
- Korea			4,372	4,681	4,389
- China			140	162	181
- Asia Pacific(excl China)			22	36	38
- Europe			18	17	15
- America			7	9	12
Local Hires			892	995	764
Executives from Local Hires			9	10	15
Employees by Gender			12,910	13,567	12,551
- Male	#		11,095	11,633	10,825
- Female			1,815	1,934	1,726
- Female Ratio	%		14	14	14
Employees in Revenue Generated Positions (Sales, Production, R&D)			3,928	3,486	3,224
- Management Positions (Male)	#		2,758	2,883	2,670
- Management Positions (Female)			540	603	554
- Female Management Positions Ratio	%	Korea	16	17	17
Employees in Leadership Positions			4,372	4,681	4,389
- Management Positions (Male)	#		3,625	3,833	3,577
- Management Positions (Female)			672	763	717
- Female Management Positions Ratio	%		16	17	17
- Senior Executives (Male)	#		71	78	88
- Senior Executives (Female)			4	7	7
- Female Senior Executives Ratio	%		5	8	7

1) Leadership position refers to all levels of employees including or higher than the professionals

2) Executives refers to all levels of employees including or higher than department leaders or senior executives

S Employees

[Employees]

Employees	Units	Scope	2018	2019	2020	
Ratio of Average Female Salary to Male						
- Non-management level (base salary only)	%	Korea	74	76	76	
- Management level (base salary only)			91	92	93	
- Management level (base salary + other cash incentives)			89	91	94	
- Executive level (base salary only)			94	92	90	
Employees by Age						
- > 30 years old	#		12,910	13,567	12,551	
- 30-50 years old			2,550	2,930	2,407	
- < 50 years old			8,171	8,297	7,731	
Social Minorities						
- People with disability	#		2,189	2,340	2,413	
- National Veterans			327	350	348	
Employees Participated in Labor Union						
Employees Covered by Collective Bargaining Agreements						
Employee Training						
- Total Training Hours	Hours	71.3	70.9	75.2		
Employees Covered by Collective Bargaining Agreements						
Employee Training						
- Total Training Hours	Hours	100	100	100		
- Average Training Hours	Hours	530,601	491,626	428,997		
- Total Amount Spent on Training	KRW 100 million	41	36	34		
- Average Amount Spent on Training	KRW 10,000	184	183	125		
		143	135	100		

1) There is no discrimination in remuneration due to gender, and factors such as number of years of service contribute to the difference in remuneration.

2) As of 2020, the ratio of the average female compensation to the male average compensation for executive positions (base salary + other cash incentives) is 94%

3) In the case of the Employee Engagement survey, the employee satisfaction survey was conducted and the survey response rate was 81% and the positive response rate was 77% in 2020

S Employees

[Employees]

Employees	Units	Scope	2018	2019	2020
Total New Hires	#	Korea	1,464	1,497	402
- Male			1,127	1,246	320
- Female			337	251	82
- >30 years old			974	1,126	187
- 30-50 years old			439	302	144
- <50 years old			51	69	71
Total Employee Turnover			544	562	575
- Male			453	483	490
- Female			91	79	85
Total Voluntary Employee Turnover			309	317	284
- Male			231	248	223
- Female			78	69	61

S Community Engagement

LG Chem has implemented four strategic tasks, Green Education/Green Ecology/Green Energy/Green Economy, focusing on its social contribution vision of "LG Chem Green Connector", to promote community engagement and social contribution activities. For major programs, impact assessment is being conducted, and new items are continuously discovered in line with the recent trends to expand areas that can contribute to the local communities. We review our performances annually and promote the community engagement programs in the longer term perspective aligned with our corporate strategies.

[Community Engagement]

Community Engagement	Units	Scope	2018	2019	2020
Total Corporate Giving	KRW 100 million	Global	162	171	156
Employees Volunteer Hours	Hours		12,732	13,665	4,879

1) Due to COVID-19, employees' volunteer hours have been greatly reduced in 2020

G Governance

Establishing a board of directors with independence, expertise and diversity is essential for efficient and active governance. LG Chem reports all information related to LG Chem's governance structure in accordance with the domestic securities market disclosure regulations through LG Chem's corporate governance report.

[Corporate Governance Report\(https://www.lgchem.com/company/investment-information/management-information/corporate-governance\)](https://www.lgchem.com/company/investment-information/management-information/corporate-governance)

G Corporate Ethics and Behavior

Based on LG's unique behavior of Jeong-do management, LG Chem is trying to establish a fair and transparent culture not only for our employees but also for stakeholders by conducting risk checks in various areas. We regularly conduct internal audits regularly and the results are reported bi-annually to the audit committee, quarterly to CEO , and weekly to corporate staff meetings.

Since 2012, we have appointed compliance assistant and set compliance control standards. The validity evaluation of compliance standards is reported to the board of directors once a year, and legal risks are managed by typifying (including anti-corruption and fair trade) and considering the size and frequency of legal risks. In particular, we are analyzing risks and establishing strategies about anti-corruption and fair trade issues, and we plan to upgrade the management procedure for anti-corruption risks.

For fair trade, risks are monitored through the annual Compliance Program (CP) and the results are reported to senior executives. We proactively inspect areas where risks can occur and conduct preventive activities and trainings.

[Ethics and Behavior]

Ethics and Behavior	Units	Scope	2018	2019	2020
Anti-corruption Cases Under Investigation	#	Global	10	13	5
Anti-corruption Cases With Actions Taken			5	9	2
Participants in Anti-corruption Training	#	Korea			
- About Jeong-do Management			12,910	13,567	12,511
- About Compliance			-	11,436	20,360
Participants in Fair Trade Training					
- About Subcontractors and Agents	#		147	430	14,444
- About Compliance			9,715	11,436	12,151

1) In the case of participants in training, it has been aggregated by training and is expected to increase compared to the above data if offline training data is included

2) Subcontractor and agents related education increases as online training is conducted in 2020

LG Chem operates an Information Security Council consisting of executives of security-related departments to review and discuss security measures, coordination, planning and performance. In 2021, we discussed revising information security regulations, implementing security policies, and reviewing security policies to facilitate the Smart Work system. In addition to the Information Security Council, a Risk Management Committee has been established which led by Chief Risk Officer (CFO concurrently takes the charge), and the Information Security Division under the committee runs.

All related tasks are reported to the Chief Information Security Officer (Security/Infra Department Leader), and we put our best efforts to protect our confidential information such as our core technologies and management strategies by reporting to CFO every month.

[Cyber Security]

Cyber Security	Units	Scope	2018	2019	2020
ISO 27001 Certified	*	Korea	2	4	4
Cyber Security Awareness Activities			12	12	12
Average Training Hours About Cyber Security			20	20	30

1) Information security risk assessment is carried out through accounting audits, mock hacking, and self-diagnosis. In 2020, self-diagnosis was carried out on Cheong-ju business sites and headquarters-related departments.

LG Chem recognizes that observing the tax laws of each country in which it operates business and fulfilling its duty to pay taxes faithfully as a taxpayer are important factors contributing to national finance as well as maximizing shareholder value. For sustainable management, we comply with the following tax policies and thoroughly manage tax risks.

[Tax Policy]

LG Chem has established and operated the following tax-related principles and regulations.

- Fulfilling tax returns and payment obligations faithfully in accordance with the relevant laws of each country
- Maintain a transparent relationship with the tax authorities and faithfully fulfill the obligation to submit data requested by the tax authorities of each country
- Establish and implement a reasonable transfer pricing policy in line with tax laws and OECD transfer pricing guidelines for international transactions with overseas corporations
- Establish an efficient tax management system such as calculating the effective tax rate by country and identifying the tax payer following the introduction of digital tax
- Prohibition of transfer of income to a tax haven for the purpose of tax evasion
- For transparent tax information disclosure, it is disclosed to the outside through the annual audit report and the electronic disclosure system.

[Tax risk management]

LG Chem is responding to tax risks by establishing the following tax management process.

- Tax risk assessment based on advice from external experts and tax authorities when making important business decisions
- Report to the management according to the type and amount of tax and clearly define responsibilities and tasks related to tax return and payment
- In the event of tax risks such as uncertainties related to tax laws, the risks are resolved through collaboration with external experts

[Tax Strategy]

Other Economic Indicators	Units	Scope	2018	2019	2020
Reported Taxes	KRW million	Global	435,606	169,180	367,839
-Korea			387,965	100,760	692,538
-Asia			60,362	108,503	290,065
-Europe			2,488	4,747	6,800
-America			,1,631	-18,847	53,112
-Etc			101	149	141
-Adjustments			-16,942	-26,131	-674,817
Cash Taxes Paid			688,677	576,713	513,128

1) The total amount of reported taxes is based on consolidated financial statements

Public Policy and Regulation

LG Chem frequently reports its plans and status to senior executives regarding annual government policies and regulations mainly by Corporate Affairs Department, and shares details through frequent reports on major issues. In conjunction with major investments, we are conducting policy support activities by securing incentives, maintaining existing allocation tariffs and discovering new items, and finding policy support tasks and regulations that can affect accelerating projects such as battery materials, sustainable solutions, e-mobility, new medicines.

[Public Policy and Regulation]

Public Policy and Regulation	Units	Scope	2018	2019	2020
Contributions to trade associations	KRW 1,000	Korea	2,098,253	2,311,660	2,090,714
Contributions to political campaigns			-	-	-

1) Under the Domestic Political Funds Act, companies are prohibited from sponsoring political organizations.

2) Below is the 5 major contributions to trade associations

- Korea Enterprise Federation : 321,450,000 KRW
- Korea Petrochemicals Industry Association : 229,592,000 KRW
- Global Battery Alliance : 228,316,000 KRW
- PC/BPA Council : 206,181,000 KRW
- Korea Vinyl Environmental Council : 202,500,000 KRW

LG Chem offers a differentiated Sustainable Solution to its customers and stakeholders by viewing all business processes through the 'outside in' view starting from the customer's perspective. LG Chem's Sustainable Solution, beyond the environmental and social compliance, evaluates and adjusts its portfolio of products and technologies to sustainability standards defined by LG Chem, and keeps pace with its customers' future businesses. In order to establish sustainability standards for products and technologies, LG Chem analyzes indicators and initiatives of global standards/evaluation agencies, and guidance from government agencies such as EU Taxonomy to identify sustainable values pursued worldwide. Through industry benchmarking, we selected six key areas of sustainability (carbon & energy, resource efficiency, product toxicity, biodiversity, water, and society). Through Negative Impact Check and Positive Impact Check, LG Chem will analyze and manage products and technologies developed internally. In the future, we will strengthen Life Cycle Assessment (LCA) and Value Balancing Alliance (VBA) framework-based social impact analysis to further enhance product improvement and contribution to product sustainability competitiveness.



Carbon & Energy

Resource

Biodiversity

Bio SAP (Super Absorbent Polymer)

Using renewable vegetable raw materials such as waste cooking oil that reduce carbon emission, contribute to waste reduction, and securing biodiversity by reducing the use of palm oil, which is at risk of rainforest destruction



Carbon & Energy

Resource

PCR ABS (Post Consumer Recycled Acrylonitrile Butadiene Styrene)

Reduce carbon and contribute to waste reduction through mechanical recycling of waste plastics.



Carbon & Energy

Resource

PLA (Poly Lactic Acid)

As raw materials for biodegradable plastics, contributing to waste and carbon reduction



Customer Satisfaction

In the Customer Value Innovation Department, LG Chem oversees and supports company-wide customer value innovation activities. In each business division, a customer value innovation team is organized to supervise the companies customer value innovation activities, and customer value innovation activities are being carried out to enhance customer satisfaction under the leadership of the corporate and business divisions. We conduct a customer satisfaction survey once a year under the supervision of the Customer Value Innovation Team. On a bi-weekly basis, the overall status of customer value innovation activities and major customer pain points received are reported to the senior management. We conduct a customer satisfaction survey annually to strengthen the foundation for activities to improve customer satisfaction and actively respond to customers' expectations.

[Customer Satisfaction]

Customer Satisfaction	Units	Scope	2018	2019	2020
Satisfaction Survey Coverage	%	Global	94	94	100
Satisfaction Survey Score	Score		61.4	66.1	79.9

- 1) The scope of the customer satisfaction survey is based on the scope of the entire business division that conducted the customer satisfaction survey.
- 2) From the results of the 2020 survey, a customer satisfaction survey was conducted for all business divisions under the supervision of the Customer Value Innovation Team.

LG Chem is growing together with mankind and society by continuously creating direct and indirect economic values as well as social and environmental values throughout our business activities. Going forward, LG Chem will further strengthen our capabilities so that we can build trust from our communities and provide the highest value to our stakeholders.

[Other Economic Indicators]

Other Economic Indicators	Units	Scope	2018	2019	2020
Revenue	KRW million	Global	27,007,182	27,353,078	30,076,510
- Revenue excluding the LG Energy Solution			20,508,266	19,002,827	17,712,986
R&D Expenses	KRW 100 million		7,171	7,186	7,193
R&D Personnel	#		3,302	3,060	2,539
Procurement of Raw Materials	KRW million		16,123,353	16,223,224	15,912,709
Total Dividends			460,058	153,608	778,383
EH&S Investments	KRW 100 million		1,423	1,850	1,804

1) The total amount of revenue, raw material procurement, and dividend is based on consolidated financial statements

2020 ESG Factbook



ESG Material Indicators

LG Chem established its sustainability vision and strategy in 2019, which consists of nine strategic areas to dedicate our commitment for sustainability. In 2020, LG Chem declared the mid- to long-term goals, including 'Carbon Neutral Growth', focusing on five top priority areas among our strategic areas.

LG Chem prioritizes key indicators that need to be managed first from an ESG perspective in order to communicate more actively with various stakeholders and strengthen its business competitiveness.

Through the analysis of indicators from global standards and indices agencies, and the same industry's peer companies, 120 ESG indicators were integrated into 30 indicators and 20 material indicators were decided as material indicators through a materiality assessment. Furthermore, based on the concept of Stakeholder Capitalism Metrics proposed by the World Economic Forum (WEF), the material indicators were classified into four categories: Environment, Social and Governance (ESG) and Growth. We would like to disclose information about LG Chem's approaches and performances on ESG and Growth based on these material indicators in the future.

In the case of approaches and performances for ESG, the Carbon Disclosure Project (CDP), the Climate Disclosure Standards Board (CDSB), the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), and the Sustainability Accounting Standards Board (SASB) jointly proposed Sustainability-related Financial Disclosure framework, and internal management and external disclosure of ESG factors will be enhanced based on this framework.

ESG Indicators

구분	Sustainability Areas	Indicators
E	Climate Action	GHG Emission Reduction
	Water Management	Water Withdrawal, Consumption and Discharge
	Renewable Energy	Energy Consumption Reduction
	Environment Protection	Air Pollutants Reduction
	Responsible Products	Product Responsibility and Chemical Stewardship
	Environment Protection	Waste Emission and Recycling
	Environment Protection	Water Pollutants Reduction
	Circular Economy	Reused and Recycled Materials
S	Safety & Wellness	Employee and Process EH&S
	Human Rights & Diversity	Talent Attraction, Training and Employee Engagement
	Human Rights & Diversity	Employee Diversity, Equity and Inclusion
	Responsible Supply Chain	Supply Chain Sustainability
	Human Rights & Diversity	Human and Labor Rights
G	New Areas	Community Engagement
	New Areas	Corporate Governance
	New Areas	Corporate Ethics and Behavior
	New Areas	Cyber and Information Security
Growth	Responsible Products	Sustainable Solutions
	Responsible Products	Customer Satisfaction

Data Coverage

This document includes LG Chem's performances from 2020 calendar year and covers LG Chem's global entities of which we have operational control, including our headquarters, domestic and global production sites, and R&D campuses. For financial statements, data from consolidated financial statements were applied, and the scope was separately indicated if reporting boundaries were different.

※ Data from business sites where the withdrawal have been decided, LG Energy Solution, and FarmHannong are excluded.

GHG and Energy

LG Chem has organized a Sustainability Strategy team under the CEO in 2020 to support and make the core strategic decisions related to corporate sustainability, set the mid- to long-term goals, and promote the implementation tasks. Sustainability-related issues are reported and discussed as a major agenda at monthly management meetings where the company's top executives gather, among which climate change-related issues are discussed as top priorities. In order to do regular monitoring, we periodically check and make decisions on sustainability issues, including climate change, at corporate staff meetings, which are weekly executive-level meetings attended by CEOs and corporate Staff's key executives. In addition, the Energy Committee, consisting of CEOs and plant leaders, is operated annually to check greenhouse gas/energy related action items and make decisions on future plans and key initiatives. With the establishment of the "ESG Committee" within the board, regular and systematic monitoring of major ESG indicators in responding to climate change, such as greenhouse gases and energy usage, will be conducted around the board.

The risks posed by climate change are largely due to increased operating costs in response to existing regulations such as the Emission Trading Scheme and new regulations such as Carbon Border Adjustment Mechanism. In addition, there is a risk of weakening the competitiveness of existing high-carbon products due to changes in market and customer preferences. Also, risks of physical loss to assets and supply chains due to climate change such as heat waves/storms/sea level rise are identified. On the other hand, we recognize opportunities to strengthen market competitiveness and increase sales through the development of low-carbon products, and to reduce operating costs by the use of low-carbon energy.

LG Chem has actively responded to climate change risks and discovered business opportunities through its portfolio of EV and ESS batteries before LG Energy Solution split, and completed spinoff of LG Energy Solution in 2020 to expand its business. Even after the spinoff, we are building and fostering a business portfolio focusing on eco-friendly materials (PCR-materials, bio-materials, etc.) and battery materials (cathode materials, etc.) in order to respond to risks arising from climate change and create business opportunities. In addition to transforming the business portfolio, domestic and foreign business sites are planning to use 100% renewable energy, and overseas sites are planning to use RE100 by 2030 and domestic sites are by 2050. Furthermore, we are actively investing in R&D that can reduce greenhouse gases from a mid- to long-term perspective such as securing carbon capture and utilization (CCU) technology, developing new NCC pyrolysis processes, and developing low carbon and eco-friendly process technologies.

LG Chem has declared its mid- to long-term goals of Carbon Neutral Growth, which maintains greenhouse gas emission levels in 2019 by 2050, and RE100 (Renewable Energy 100%) which use 100% renewable energy by 2050. We are internally considering raising our mid- to long-term goals as the international community has agreed to respond to climate change by focusing on "Net-zero."

[GHG Emissions]

GHG Emissions	Units	Scope	2018	2019	2020
Scope 1 Emissions	tCO2-eq	Korea	5,161,403	5,260,041	5,193,936
Scope 2 Emissions			2,584,687	2,879,992	2,864,611
Scope 1+2 Emissions			7,746,089	8,140,033	8,058,547
Scope 1 Emissions		excl. Korea	155,946	145,567	195,276
Scope 2 Emissions			1,196,537	1,224,411	1,265,960
Scope 1+2 Emissions			1,352,483	1,369,978	1,461,236
Scope 1 Emissions		Global	5,317,349	5,405,608	5,389,212
Scope 2 Emissions			3,781,224	4,104,403	4,130,571
Scope 1+2 Emissions			9,098,572	9,510,011	9,519,783
Scope 1 Emissions Intensity			0.2593	0.2845	0.3043
Scope 2 Emissions Intensity			0.1844	0.2160	0.2332
Scope 1+2 Emissions Intensity			0.4437	0.5005	0.5374
Scope 3 Emissions	tCO2-eq	Korea	1,126,063	1,015,464	1,267,369
- Purchased goods and services			520,307	494,538	517,985
- Capital goods (upstream)			65	82	58
- Fuel and energy related activities			104,848	122,922	121,904
- Upstream transportation and distribution			283,810	151,406	318,438
- Waste generated in operations (composting, incinerating)			16,825	19,113	19,679
- Business travel			3,130	2,767	2,265
- Employee commuting			10,528	7,987	4,737
- Upstream leased assets			N/A	N/A	N/A
- Downstream transportation and distribution			N/A	N/A	N/A
- Processing of sold products			N/A	N/A	N/A
- Use of sold products			N/A	N/A	N/A
- End-of-life treatment of sold products			N/A	N/A	N/A
- Downstream leased assets			N/A	N/A	N/A
- Franchises			N/A	N/A	N/A
- Investments			180,268	210,271	276,686
- Other upstream			6,282	6,379	5,616
- Other downstream	N/A	N/A	N/A		

1) Emissions from Korea were disclosed based on the greenhouse gas statements submitted in accordance with ETS, including emissions from headquarters and sales offices

[Energy Use]

Energy Consumption	Units	Scope	2018	2019	2020	
Direct Energy Use	TJ	Korea	96,624	96,964	95,033	
Indirect Energy Use			57,149	52,929	47,777	
Direct Energy Use		excl. Korea	988	2,532	3,483	
Indirect Energy Use			5,923	3,451	3,390	
Direct Energy Use		TJ / KRW million	Global	97,612	99,496	98,517
Indirect Energy Use				63,072	56,379	51,166
Direct Energy Use Intensity	0.0048			0.0052	0.0056	
Indirect Energy Use Intensity	0.0031			0.0030	0.0029	
Total Energy Use	TJ			160,683	155,875	149,683
Total Energy Use Intensity	TJ / KRW million			0.0077	0.0081	0.0084
Total Renewable Energy Use	GJ		50,727	58,893	63,371	

1) In the case of renewable energy use, it is expected to increase by utilizing overseas power purchase agreements (PPA) and domestic green premium system as of 2021.

E Water, Pollutants, Waste

EH&S divisions and the EHS departments from production sites monitors and checks the current status of legal risks conducting periodic voluntary inspections of the Environment, Health & Safety laws and regulations and identifying improvement items.

In particular, in the case of items subject to legal management, regular monitoring is performed to check whether the management standards are met in real time, and LG Chem is continuously expanding the scope to promote preemptive improvement to areas not subject to regulation.

For business sites newly established after 2020, landfill zero certification is mandatory and it will gradually expand to existing business sites.

In order to establish solid and preemptive EH&S management system, we strive to raise awareness of executives and employees by discovering and sharing best practices related to EH&S through the EH&S Performance Sharing Meetings every year. Outstanding performances are rewarded through the contest.

[Water Consumption]

Water Consumption	Units	Scope	2018	2019	2020
Water Withdrawal	m3	Global	63,364,900	64,410,387	58,698,737
- Ground water			412,247	433,258	411,154
- Surface water			687,961	609,695	-
- Industrial water			58,333,229	59,344,639	54,622,172
- Municipal water			3,878,805	3,959,695	3,650,039
- Rainwater			28,567	12,865	8,722
- etc			24,090	50,236	6,650
Water Withdrawal Intensity	m3 / KRW million		3.0897	3.3895	3.3139
Total Wastewater	m3		20,598,528	20,481,427	20,536,583
Total Wastewater Recycled			2,007,796	1,785,295	1,910,565
Total Wastewater Recycled	%		10	9	9
Water Discharge	m3		18,590,732	18,696,132	18,626,018
Water Discharge Intensity	m3 / KRW million		0.9065	0.9839	1.0515
Water Consumption	m3		44,774,167	45,714,256	40,072,720
Water Consumption Intensity	m3 / KRW million	2.1832	2.4057	2.2623	

1) The amount of water withdrawal from the Water Stress areas in Korea is 1.4%

[Water Pollutants]

Water Pollutants	Units	Scope	2018	2019	2020
COD Emissions	metric tons	Global	845	741	617
COD Emissions Intensity	kg / KRW million		0.0412	0.0390	0.0348
T-N Emissions	metric tons		313	297	217
T-N Emissions Intensity	kg / KRW million		0.0153	0.0156	0.0123
T-P Emissions	metric tons		44	33	28
T-P Emissions Intensity	kg / KRW million		0.0021	0.0017	0.0016

[Air Pollutants]

Air Pollutants	Units	Scope	2018	2019	2020
Dust Emissions	metric tons	Global	168	187	120
Dust Emissions Intensity	kg / KRW million		0.0082	0.0098	0.0068
NOx Emissions	metric tons		1,205	1,172	8,356
NOx Emissions Intensity	kg / KRW million		0.0588	0.0617	0.4717
SOx Emissions	metric tons		281	199	298
SOx Emissions Intensity	kg / KRW million		0.0137	0.0105	0.0168
HAPs Emissions	metric tons		18	87	42
HAPs Emissions Intensity	kg / KRW million		0.0009	0.0046	0.0024
VOCs Emissions	metric tons		234	305	658
VOCs Emissions Intensity	kg / KRW million		0.0114	0.0161	0.0371

1) For the amount of NOx and SOx emission, the Yeosu and Daesan plants have increased their emissions due to the change of the emission calculation method in accordance with the enforcement of the Domestic Air Management Area Act

[Waste]

Waste	Units	Scope	2018	2019	2020
Nonhazardous Waste	metric tons	Global	126,803	134,833	113,191
- Recycling			87,256	85,031	80,510
- Incineration			21,745	26,237	22,652
- Landfill			14,190	20,896	8,121
- etc			3,612	2,669	1,909
Hazardous Waste			130,545	135,442	129,256
- Recycling			103,321	105,771	103,752
- Incineration			25,512	27,242	23,992
- Landfill			1,184	1,898	897
- etc			528	531	615
Total Waste			257,347	270,276	242,448
Total Waste Intensity	metric tons / KRW million		0.0125	0.0142	0.0137
Recycling Rate	%		74%	71%	76%

E Product Responsibility and Chemical Stewardship

Chemical substances information are identified and collected through the product component data securement process led by the Chemical Stewardship Team in the EH&S division. Hazardous substances are internally classified into Levels 1, 2, and 3, and Level 1 and 2 substances are designated as prohibited substances, and the handling of substances against the regulatory requirements is prohibited. To monitor and block the inflow of prohibited substances at the raw materials stage, we conduct material reviews on a daily basis. In the case of handling of high-risk substances, we review the current status and report to senior executives annually.

[Hazardous Substances]

Hazardous Substances	Units	Scope	2018	2019	2020
REACH Substances	%	Global	-	17.74	29.80
SVHC Substances			12.22	8.40	2.39
CMR Substances			25.41	15.89	5.99
Hazardous Substances Risk Assessment			-	5.92	13.59
Product Life-cycle Assessment			67.8	63.6	73.8

1) EU REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals

2) SVHC(Substances of Very High Concern)

3) CMR : Substances classified as carcinogenic, mutagenic or toxic to reproduction (CMR) according to hazard categories 1A and 1B of the Harmonized Classification, Labelling and Packaging (CLP) Regulation

4) Risk Assessment : Percentage of substances registered among all chemical substances

5) For Product LCA, the ratio include internal sales.

E Reused and Recycled Materials

LG Chem is strengthening R&D organizations to develop the technologies about reuse and recycling, expanding business portfolios based on recycled raw materials and building a new growth engine in line with the paradigm shift towards a circular economy. We produce the plastic products based on post-consumer recycled (PCR) materials which have been processed via mechanical recycling. Waste plastics which were previously treated as disposable are now considered as high-value resources that completing circular economy. For the longer term perspective, we are going to secure product competitiveness through chemical recycling technologies. For battery materials, we plan to establish partnerships with companies have metal refining and smelting technologies and incorporate renewable raw materials into our value chain to establish the sustainable supply chain. Business companies of LG Chem discuss the key issues from sustainable business portfolios such as expanding renewable raw materials on monthly management meetings and review the mid to long term business plans through annual strategy planning. We want to play a role as a leading chemical company.

[Reused and Recycled Materials]

Reused and Recycled Materials	Units	Scope	2018	2019	2020
Production Volume Based on Reused and Recycled Materials	metric tons	Global	1,582	2,533	4,186
Reused and Recycled Materials Input			518	827	1,245

S Employee and Process EH&S

Under the philosophy that there is no business to proceed at the expense of EH&S, LG Chem conducts Magnolia Project (M-PJT) to innovate and advance the EH&S management system. Through M-PJT we want to build a preemptive risk management system to become the safest business sites and regularly monitor the status and reports to senior management on monthly management meetings and improve the system.

In particular, we aim to reduce incident indicators by 20% every year, and strengthen our capabilities by organizing teams and recruiting professional manpower, investing in EH&S, and enacting and revising technical guidelines.

[EH&S]

EH&S	Unit	Scope	2019	2020	
Employees					
- Fatality Rate	Rate	Global	-	0.0115	
- TRIR			0.4721	0.6620	
- LTIR			0.1500	0.2590	
Contractors					
- Fatality Rate	Rate		-	0.0055	
- TRIR			0.3067	0.3619	
- LTIR			0.1592	0.1919	
Process					
- PSIC	#			1	5
- PSTIR	Rate		0.0029	0.0140	
Transport Incidents					
- Road	#		2	2	
- Rail			2	1	
- Ship			-	-	
				-	1

※ Three-year data should be provided to improve data comparability, but due to the reorganization of the business companies and the withdrawal of the production sites 2018 data are not applicable to calculate the exact number. 3 years data will be available from next year.

1) Fatality Rate : Total Fatality Cases*200,000 / Total working hours

2) Total Recordable Incident Rate : Total Recordable Incidents*200,000 / Total working hours

3) Lost Time Incident Rate : Total Lost Time Incidents*200,000 / Total working hours

4) Process Safety Total Incident Rate : Process Safety Incident Cases*200,000 / Total working hours

*In the case of process safety incidents, it is based on the internal comprehensive accident index considering injury, fire or explosion, chemical release, economic loss, etc.

5) For total working hours, it is based on full-time workers to work eight hours for 300 days

Supply Chain Management

At LG Chem, the corporate procurement department and procurement departments of business companies take charge of supplier relations to create the sustainable supply chains. To do so, we identify the risks on the supply chains and conduct the supplier assessment based on procurement regulations including supplier management regulations, and also monitor the agreement status of supplier code of conduct.

In addition, CSR assessment results of suppliers reflect on the regular supplier assessment of business companies to monitor the suppliers' risks and management levels and improve the weakness of them. We expect the mutual growth with our suppliers by doing so. Going forward, we strengthen our assessment methodology reflecting our sustainability strategy.

[Supply Chain Management]

Supply Chain Management	Units	Scope	2018	2019	2020
Regular Suppliers	#	Global	1,328	1,288	1,262
- Sustainability evaluation conducted			187	171	291
- High risk suppliers			7	23	8
- On-site audits			6	13	-

- 1) The standard for regular suppliers shall be based on internal standards, excluding suppliers with lower than three orders per year, and with purchases of less than 300 million KRW (less than 100 million KRW for Life Sciences)
- 2) In the case of a high-risk suppliers, it means suppliers that results below 65 points according to the CSR evaluation of the suppliers
- 3) Due to COVID-19 in 2020, an operational guide has been sent to suppliers to substitute the on-site audits, and the evaluation system will be upgraded by reflecting LG Chem's sustainability strategy from 2021.

S Employees

[Employees]

Employees	Units	Scope	2018	2019	2020
Total Employees			18,390	19,025	18,243
- Korea			12,910	13,567	12,551
- China			4,117	4,177	4,394
- Asia Pacific(excl China)			677	694	706
- Europe			245	315	318
- America			441	272	274
Total Employees in Leadership Positions	#	Global	4,559	4,905	4,635
- Korea			4,372	4,681	4,389
- China			140	162	181
- Asia Pacific(excl China)			22	36	38
- Europe			18	17	15
- America			7	9	12
Local Hires			892	995	764
Executives from Local Hires			9	10	15
Employees by Gender			12,910	13,567	12,551
- Male	#		11,095	11,633	10,825
- Female			1,815	1,934	1,726
- Female Ratio	%		14	14	14
Employees in Revenue Generated Positions (Sales, Production, R&D)			3,928	3,486	3,224
- Management Positions (Male)	#		2,758	2,883	2,670
- Management Positions (Female)			540	603	554
- Female Management Positions Ratio	%	Korea	16	17	17
Employees in Leadership Positions			4,372	4,681	4,389
- Management Positions (Male)	#		3,625	3,833	3,577
- Management Positions (Female)			672	763	717
- Female Management Positions Ratio	%		16	17	17
- Senior Executives (Male)	#		71	78	88
- Senior Executives (Female)			4	7	7
- Female Senior Executives Ratio	%		5	8	7

1) Leadership position refers to all levels of employees including or higher than the professionals

2) Executives refers to all levels of employees including or higher than department leaders or senior executives

S Employees

[Employees]

Employees	Units	Scope	2018	2019	2020	
Ratio of Average Female Salary to Male						
- Non-management level (base salary only)	%	Korea	74	76	76	
- Management level (base salary only)			91	92	93	
- Management level (base salary + other cash incentives)			89	91	94	
- Executive level (base salary only)			94	92	90	
Employees by Age						
- > 30 years old	#		12,910	13,567	12,551	
- 30-50 years old			2,550	2,930	2,407	
- < 50 years old			8,171	8,297	7,731	
Social Minorities						
- People with disability	#		2,189	2,340	2,413	
- National Veterans			327	350	348	
Employees Participated in Labor Union						
Employees Covered by Collective Bargaining Agreements						
Employee Training						
- Total Training Hours	Hours	71.3	70.9	75.2		
- Average Training Hours	Hours	100	100	100		
- Total Amount Spent on Training	KRW 100 million	530,601	491,626	428,997		
- Average Amount Spent on Training	KRW 10,000	41	36	34		
		184	183	125		
		143	135	100		

1) There is no discrimination in remuneration due to gender, and factors such as number of years of service contribute to the difference in remuneration.

2) As of 2020, the ratio of the average female compensation to the male average compensation for executive positions (base salary + other cash incentives) is 94%

3) In the case of the Employee Engagement survey, the employee satisfaction survey was conducted and the survey response rate was 81% and the positive response rate was 77% in 2020

S Employees

[Employees]

Employees	Units	Scope	2018	2019	2020
Total New Hires	#	Korea	1,464	1,497	402
- Male			1,127	1,246	320
- Female			337	251	82
- >30 years old			974	1,126	187
- 30-50 years old			439	302	144
- <50 years old			51	69	71
Total Employee Turnover			544	562	575
- Male			453	483	490
- Female			91	79	85
Total Voluntary Employee Turnover			309	317	284
- Male			231	248	223
- Female			78	69	61

S Community Engagement

LG Chem has implemented four strategic tasks, Green Education/Green Ecology/Green Energy/Green Economy, focusing on its social contribution vision of "LG Chem Green Connector", to promote community engagement and social contribution activities. For major programs, impact assessment is being conducted, and new items are continuously discovered in line with the recent trends to expand areas that can contribute to the local communities. We review our performances annually and promote the community engagement programs in the longer term perspective aligned with our corporate strategies.

[Community Engagement]

Community Engagement	Units	Scope	2018	2019	2020
Total Corporate Giving	KRW 100 million	Global	162	171	156
Employees Volunteer Hours	Hours		12,732	13,665	4,879

1) Due to COVID-19, employees' volunteer hours have been greatly reduced in 2020

G Governance

Establishing a board of directors with independence, expertise and diversity is essential for efficient and active governance. LG Chem reports all information related to LG Chem's governance structure in accordance with the domestic securities market disclosure regulations through LG Chem's corporate governance report.

[Corporate Governance Report\(https://www.lgchem.com/company/investment-information/management-information/corporate-governance\)](https://www.lgchem.com/company/investment-information/management-information/corporate-governance)

G Corporate Ethics and Behavior

Based on LG's unique behavior of Jeong-do management, LG Chem is trying to establish a fair and transparent culture not only for our employees but also for stakeholders by conducting risk checks in various areas. We regularly conduct internal audits regularly and the results are reported bi-annually to the audit committee, quarterly to CEO , and weekly to corporate staff meetings.

Since 2012, we have appointed compliance assistant and set compliance control standards. The validity evaluation of compliance standards is reported to the board of directors once a year, and legal risks are managed by typifying (including anti-corruption and fair trade) and considering the size and frequency of legal risks. In particular, we are analyzing risks and establishing strategies about anti-corruption and fair trade issues, and we plan to upgrade the management procedure for anti-corruption risks.

For fair trade, risks are monitored through the annual Compliance Program (CP) and the results are reported to senior executives. We proactively inspect areas where risks can occur and conduct preventive activities and trainings.

[Ethics and Behavior]

Ethics and Behavior	Units	Scope	2018	2019	2020
Anti-corruption Cases Under Investigation	#	Global	10	13	5
Anti-corruption Cases With Actions Taken			5	9	2
Participants in Anti-corruption Training	#	Korea			
- About Jeong-do Management			12,910	13,567	12,511
- About Compliance			-	11,436	20,360
Participants in Fair Trade Training					
- About Subcontractors and Agents	#		147	430	14,444
- About Compliance			9,715	11,436	12,151

1) In the case of participants in training, it has been aggregated by training and is expected to increase compared to the above data if offline training data is included

2) Subcontractor and agents related education increases as online training is conducted in 2020

LG Chem operates an Information Security Council consisting of executives of security-related departments to review and discuss security measures, coordination, planning and performance. In 2021, we discussed revising information security regulations, implementing security policies, and reviewing security policies to facilitate the Smart Work system. In addition to the Information Security Council, a Risk Management Committee has been established which led by Chief Risk Officer (CFO concurrently takes the charge), and the Information Security Division under the committee runs. All related tasks are reported to the Chief Information Security Officer (Security/Infra Department Leader), and we put our best efforts to protect our confidential information such as our core technologies and management strategies by reporting to CFO every month.

[Cyber Security]

Cyber Security	Units	Scope	2018	2019	2020
ISO 27001 Certified	*	Korea	2	4	4
Cyber Security Awareness Activities			12	12	12
Average Training Hours About Cyber Security			20	20	30

1) Information security risk assessment is carried out through accounting audits, mock hacking, and self-diagnosis. In 2020, self-diagnosis was carried out on Cheong-ju business sites and headquarters-related departments.

Public Policy and Regulation

LG Chem frequently reports its plans and status to senior executives regarding annual government policies and regulations mainly by Corporate Affairs Department, and shares details through frequent reports on major issues. In conjunction with major investments, we are conducting policy support activities by securing incentives, maintaining existing allocation tariffs and discovering new items, and finding policy support tasks and regulations that can affect accelerating projects such as battery materials, sustainable solutions, e-mobility, new medicines.

[Public Policy and Regulation]

Public Policy and Regulation	Units	Scope	2018	2019	2020
Contributions to trade associations	KRW 1,000	Korea	2,098,253	2,311,660	2,090,714
Contributions to political campaigns			-	-	-

1) Under the Domestic Political Funds Act, companies are prohibited from sponsoring political organizations.

2) Below is the 5 major contributions to trade associations

- Korea Enterprise Federation : 321,450,000 KRW
- Korea Petrochemicals Industry Association : 229,592,000 KRW
- Global Battery Alliance : 228,316,000 KRW
- PC/BPA Council : 206,181,000 KRW
- Korea Vinyl Environmental Council : 202,500,000 KRW

LG Chem offers a differentiated Sustainable Solution to its customers and stakeholders by viewing all business processes through the 'outside in' view starting from the customer's perspective. LG Chem's Sustainable Solution, beyond the environmental and social compliance, evaluates and adjusts its portfolio of products and technologies to sustainability standards defined by LG Chem, and keeps pace with its customers' future businesses. In order to establish sustainability standards for products and technologies, LG Chem analyzes indicators and initiatives of global standards/evaluation agencies, and guidance from government agencies such as EU Taxonomy to identify sustainable values pursued worldwide. Through industry benchmarking, we selected six key areas of sustainability (carbon & energy, resource efficiency, product toxicity, biodiversity, water, and society). Through Negative Impact Check and Positive Impact Check, LG Chem will analyze and manage products and technologies developed internally. In the future, we will strengthen Life Cycle Assessment (LCA) and Value Balancing Alliance (VBA) framework-based social impact analysis to further enhance product improvement and contribution to product sustainability competitiveness.



Carbon & Energy

Resource

Biodiversity

Bio SAP (Super Absorbent Polymer)

Using renewable vegetable raw materials such as waste cooking oil that reduce carbon emission, contribute to waste reduction, and securing biodiversity by reducing the use of palm oil, which is at risk of rainforest destruction



Carbon & Energy

Resource

PCR ABS (Post Consumer Recycled Acrylonitrile Butadiene Styrene)

Reduce carbon and contribute to waste reduction through mechanical recycling of waste plastics.



Carbon & Energy

Resource

PLA (Poly Lactic Acid)

As raw materials for biodegradable plastics, contributing to waste and carbon reduction



Customer Satisfaction

In the Customer Value Innovation Department, LG Chem oversees and supports company-wide customer value innovation activities. In each business division, a customer value innovation team is organized to supervise the companies customer value innovation activities, and customer value innovation activities are being carried out to enhance customer satisfaction under the leadership of the corporate and business divisions. We conduct a customer satisfaction survey once a year under the supervision of the Customer Value Innovation Team. On a bi-weekly basis, the overall status of customer value innovation activities and major customer pain points received are reported to the senior management. We conduct a customer satisfaction survey annually to strengthen the foundation for activities to improve customer satisfaction and actively respond to customers' expectations.

[Customer Satisfaction]

Customer Satisfaction	Units	Scope	2018	2019	2020
Satisfaction Survey Coverage	%	Global	94	94	100
Satisfaction Survey Score	Score		61.4	66.1	79.9

- 1) The scope of the customer satisfaction survey is based on the scope of the entire business division that conducted the customer satisfaction survey.
- 2) From the results of the 2020 survey, a customer satisfaction survey was conducted for all business divisions under the supervision of the Customer Value Innovation Team.

LG Chem is growing together with mankind and society by continuously creating direct and indirect economic values as well as social and environmental values throughout our business activities. Going forward, LG Chem will further strengthen our capabilities so that we can build trust from our communities and provide the highest value to our stakeholders.

[Other Economic Indicators]

Other Economic Indicators	Units	Scope	2018	2019	2020
Revenue	KRW million	Global	27,007,182	27,353,078	30,076,510
- Revenue excluding the LG Energy Solution			20,508,266	19,002,827	17,712,986
R&D Expenses	KRW 100 million		7,171	7,186	7,193
R&D Personnel	#		3,302	3,060	2,539
Reported Taxes	KRW million		435,606	169,180	367,839
- Korea			387,965	100,760	692,538
- Asia			60,362	108,503	290,065
- Europe			2,488	4,747	6,800
- America			,1,631	- 18,847	53,112
- Etc			101	149	141
- Adjustments			- 16,942	- 26,131	- 674,817
Cash Taxes Paid			688,677	576,713	513,128
Procurement of Raw Materials			16,123,353	16,223,224	15,912,709
Total Dividends		460,058	153,608	778,383	
EH&S Investments	KRW 100 million	1,423	1,850	1,804	

1) The total amount of revenue, reported taxes, raw material procurement, and dividend is based on consolidated financial statements

LR Independent Assurance Statement

Relating to LG Chem, Ltd.'s ESG Factbook for the 2020 calendar year

This Assurance Statement has been prepared for LG Chem, Ltd. in accordance with our contract but is intended for the readers of this Report.

Terms of engagement

Lloyd's Register Quality Assurance Limited (LR) was commissioned by LG Chem, Ltd. (LG Chem) to provide independent assurance on its '2020 ESG Factbook' ("the report") against the assurance criteria below to a "limited level of assurance and materiality" using "ISAE 3000".

Our assurance engagement covered evaluating the accuracy and reliability of ESG data and information in the report relating to LG Chem's operations and activities in Korea from 1 January 2018 to 31 December 2020.

Our assurance engagement excluded the data and information of LG Chem's suppliers, contractors and any third-parties mentioned in the report.

LR's responsibility is only to LG Chem. LR disclaims any liability or responsibility to others as explained in the end footnote. LG Chem's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of LG Chem.

LR's Opinion

Based on LR's approach nothing has come to our attention that would cause us to believe that LG Chem has not, in all material respects, disclosed accurate and reliable performance data and information as all errors identified during the assurance engagement were corrected.

The opinion expressed is formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.

Note: The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

LR's approach

LR's assurance engagements are carried out in accordance with our verification procedure. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Auditing LG Chem's data management systems to confirm that there were no significant errors, omissions or mis-statements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the report.
- Checking whether direct and indirect GHG emissions and energy consumptions were transposed correctly from the GHG inventory which was verified by the third-party assurance provider.
- Checking whether financial data were transposed correctly from the financial statements.
- Reviewing additional evidences made available by LG Chem.

Observations

Further observations and findings, made during the assurance engagement, are:

- LG Chem needs to further review its ESG data management process and to document its data compiling procedures in more detail to the extent necessary for the accuracy and consistency of disclosures.

LR's standards, competence and independence

LR implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 *Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* and ISO/IEC 17021 *Conformity assessment – Requirements for bodies providing audit and certification of management systems* that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants.

LR ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

LR is LG Chem's certification body for ISO 9001 and ISO 14001. We also provide LG Chem with a range of training services related to management systems. The verification and certification assessments, together with the training, are the only work undertaken by LR for LG Chem and as such does not compromise our independence or impartiality.

Tae-Kyoung Kim
LR Lead Verifier
On behalf of Lloyd's Register Quality Assurance Limited
17th Floor, Sinsong Building, 67 Yeouinaru-ro, Yeongdeungpo-gu, Seoul, Korea

Dated: 11 July 2021

LR reference: SEO00000269

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