

PERFORMANCE DATA

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ESG PERFORMANCE DATA

ESG PERFORMANCE DATA

Greenhouse Gas Emissions		Unit	2020 ①	2021 ②	2022 ③
Scope 1+2 Emissions	Global	tCO ₂ e	9,520,581	10,335,203	10,043,289
	Korea	tCO ₂ e	8,064,869	8,839,571	8,614,876
	excl. Korea	tCO ₂ e	1,455,712	1,495,632	1,428,413
	Emission intensity ④	tCO ₂ e / KRW 1M	0.5528	0.4294	0.3948
Scope 1 Emissions	Global	tCO ₂ e	5,390,035	5,439,321	5,638,675
	Korea	tCO ₂ e	5,195,758	5,290,343	5,489,590
	excl. Korea	tCO ₂ e	194,277	148,978	149,085
	Emission intensity	tCO ₂ e / KRW 1M	0.3130	0.2260	0.2217
Scope 2 Emissions	Global	tCO ₂ e	4,130,546	4,895,882	4,404,614
	Korea	tCO ₂ e	2,869,111	3,549,228	3,125,286
	excl. Korea	tCO ₂ e	1,261,435	1,346,654	1,279,328
	Emission intensity	tCO ₂ e / KRW 1M	0.2399	0.2034	0.1732
Scope 3 ⑤ Emissions	Total	tCO ₂ e	1,244,528	1,339,125	1,213,600
	1. Purchased goods and services	tCO ₂ e	517,985	571,164	425,556
	2. Capital goods	tCO ₂ e	14	56	83
	3. Fuel and energy-related activities (not included in Scope 1 or 2)	tCO ₂ e	121,904	175,732	193,940
	4. Upstream transportation and distribution	tCO ₂ e	318,438	197,919	124,744
	5. Waste generated in operations ⑥	tCO ₂ e	59,993	63,358	61,972
	6. Business travel	tCO ₂ e	2,265	970	621
	7. Employee commuting	tCO ₂ e	4,737	7,488	10,474
	8. Investments ⑦	tCO ₂ e	219,190	322,438	396,210

- ① Figures for Scope 1 and Scope 2 emissions in 2020 have been revised due to changes in the organizational boundaries.
- ② Figures for Scope 1 and Scope 2 emissions in Korea in 2021 have been partially revised based on the verification results of the Ministry of Environment.
- ③ Figures for Scope 1 and Scope 2 emissions in Korea in 2022 are based on values reported to the Ministry of Environment, and the above figures are subject to revision depending on the verification outcomes.
- ④ Emission Intensity = Global GHG Emissions / Revenues excluding LG Energy Solution, and Common and others
- ⑤ Scope 3 emissions have been calculated on the relevant categories of GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011), and we plan to increase the scope of data collection.
- ⑥ Figures reflect the combined GHG emissions from waste and wastewater discharge.
- ⑦ Figures are based on the values reported to the Ministry of Environment, and the above figures are subject to revision depending on the verification outcomes.

Energy Consumption		Unit	2020 ①	2021 ②	2022 ③
Total Energy Consumption	Global	TJ	132,593	178,405	151,401
	Korea	TJ	122,807	169,105	142,386
	excl. Korea	TJ	9,786	9,300	9,015
	Energy intensity ④	TJ / KRW 1M	0.0077	0.0074	0.0060
Direct Energy Consumption (Fuel)	Global	TJ	98,446	109,043	107,352
	Korea	TJ	94,976	106,349	104,876
	excl. Korea	TJ	3,470	2,694	2,476
	Energy intensity	TJ / KRW 1M	0.0057	0.0045	0.0042
Indirect Energy Consumption (Steam, Electricity)	Global	TJ	34,147	69,362	44,049
	Korea ⑤	TJ	27,831	62,756	37,510
	excl. Korea	TJ	6,316	6,606	6,539
	Energy intensity	TJ / KRW 1M	0.0020	0.0029	0.0017
Renewable Energy Consumption ⑥	Global	MWh	1,760	306,316	761,967

- ① Figures for energy consumption in 2020 have been partially revised due to changes in organizational boundaries. Figures for indirect energy consumption have been partially corrected due to the consistent use of the unit conversion factor (1 MWh = 0.0036 TJ).
- ② Figures for energy consumption in Korea in 2021 have been revised based on the verification results of the Ministry of Environment.
- ③ Figures for energy consumption in Korea in 2022 may be revised in the future based on the verification results of the Ministry of Environment.
- ④ Energy Intensity = Global Energy Consumption / Revenues excluding LG Energy Solution, and Common and others
- ⑤ Figures for electricity consumption in Korea include purchased electricity and self-generated electricity.
- ⑥ Means of renewable energy procurement include green pricing, RECs (solar, wind), and self-generation (solar).

Water Resources Management		Unit	2020	2021	2022
Water Withdrawal ①	Total	m ³	66,937,657	78,063,643	74,781,261
	Surface water	m ³	-	-	-
	Groundwater	m ³	501,077	444,068	440,512
	Seawater	m ³	-	-	-
	Municipal water	m ³	66,420,490	77,597,935	74,326,951
	Other ②	m ³	16,090	21,640	13,798
	Water withdrawal intensity	m ³ / KRW 1M	3.8869	3.2434	2.9400
	in regions with water stress	m ³	4,496,621	4,521,147	4,457,410
	Wastewater Discharge ③	Total	m ³	20,915,171	21,449,266
Water discharge intensity		m ³ / KRW 1M	1.2145	0.8912	0.8331
in regions with water stress		m ³	1,915,523	1,656,575	1,765,931
Water Consumption	Total	m ³	46,022,486	56,614,377	53,591,133
	Water consumption intensity	m ³ / KRW 1M	2.6724	2.3522	2.1069
	in regions with water stress	m ³	2,581,098	2,864,572	2,691,479
Water Reuse Rate ④	%	2.63	2.30	2.57	

- ① Figures for water withdrawal in 2020 and 2021 have been partially revised due to changes in organizational boundaries.
- ② Other water sources include rainwater, reclaimed wastewater, etc.
- ③ Figures for wastewater discharge in 2020 and 2021 have been partially revised due to changes in organizational boundaries and data coverage (includes wastewater not subject to legal reporting).
- ④ The amount of recycled water within the operation and purchased reclaimed wastewater have been used to calculate water reuse rate.

Water Pollution Management		Unit	2020	2021	2022
Water Pollutant Discharge	COD ❶	Metric tons	653	589	472
	Discharge intensity	kg / KRW 1M	0.0379	0.0245	0.0186
	TOC ❶	Metric tons	148	318	457
	Discharge intensity	kg / KRW 1M	0.0086	0.0132	0.0179
SS		Metric tons	319	255	240
	Discharge intensity	kg / KRW 1M	0.0185	0.0106	0.0094
T-N		Metric tons	252	273	211
	Discharge intensity	kg / KRW 1M	0.0147	0.0113	0.0083
T-P		Metric tons	31	25	34
	Discharge intensity	kg / KRW 1M	0.0018	0.0010	0.0013

❶ Reflects the gradual transition of reporting metrics from COD to TOC, in accordance with the Korean Water Environment Conservation Act.

Air Pollution Management		Unit	2020	2021	2022
Air Pollutant Emissions	Dust	Metric tons	122	167	183
	Emission intensity	kg / KRW 1M	0.0071	0.0069	0.0072
NOx		Metric tons	867	4,134	3,823
	Emission intensity	kg / KRW 1M	0.0504	0.1718	0.1503
SOx		Metric tons	141	184	240
	Emission intensity	kg / KRW 1M	0.0082	0.0076	0.0094
VOCs		Metric tons	577	956	1,206
	Emission intensity	kg / KRW 1M	0.0335	0.0397	0.0474
HAPs		Metric tons	241	273	298
	Emission intensity	kg / KRW 1M	0.0140	0.0113	0.0117

Waste Management		Unit	2020	2021	2022
Waste Generated	Total	Metric tons	230,942	278,345	279,585
	Waste intensity	Metric tons / KRW 1M	0.0134	0.0116	0.0110
Nonhazardous Waste	Total	Metric tons	110,922	153,981	150,922
	Recycling	Metric tons	74,724	108,145	111,612
	Incineration (w/ heat recovery)	Metric tons	11,894	22,682	23,149
	Incineration	Metric tons	16,018	12,359	6,177
	Landfill	Metric tons	8,286	10,795	9,984
	Other	Metric tons	-	-	-
Hazardous Waste	Total	Metric tons	120,020	124,364	128,663
	Recycling	Metric tons	49,919	53,961	60,374
	Incineration (w/ heat recovery)	Metric tons	46,478	53,407	54,361
	Incineration	Metric tons	22,652	15,501	12,862
	Landfill	Metric tons	972	1,495	1,066
	Other	Metric tons	-	-	-
Waste Recycling Rate	incl. Incineration (w/ heat recovery)	%	79	86	89
	excl. Incineration (w/ heat recovery)	%	54	58	62
Zero Waste to Landfill (ZWTL) designations ❶	Site		-	-	3

❶ Naju and Iksan (cathode materials) in Korea, Quzhou in China.

Hazardous Substances Management ❶		Unit	2020	2021	2022
Percentage of products containing REACH ❷ Annex 17 substances		%	29.80	16.10	9.69
Percentage of products containing REACH SVHCs ❸ substances		%	2.39	1.57	2.47
Percentage of products containing CMR ❹ substances		%	5.99	2.71	4.65
Hazardous chemicals risk assessment ❺		%	13.59	25.09	26.33

❶ Calculated the percentage of the number of products containing each substance to the number of products sold per year.

❷ The EU's system of Registration, Evaluation, Authorization and Restriction of Chemicals.

❸ Substances of Very High Concern; highly hazardous substances listed in Annex XIV of the EU's REACH regulations.

❹ Carcinogenic, Mutagenic and Reprotoxic chemicals.

❺ Percentage of substances completed/exempt from substance registration among the constituent substances of the sold product.

Reused/Recycled Materials		Unit	2020	2021	2022
Percentage of reused/recycled materials ❶ input		%	1.30	1.44	1.68

❶ The amount of Post-Consumer Recycled Polycarbonate (PCR PC) input relative to the total PC input has been used to calculate the percentage of reused/recycled materials input.

Employee and Process EH&S		Unit	2020	2021	2022 ¹
Employees	Fatality Rate ²	Rate	0.0115	0.0056	-
	TRIR ³	Rate	0.6506	0.7642	0.6079
	LTIR ⁴	Rate	0.2476	0.2454	0.0968
Subcontractors	Fatality Rate	Rate	0.0051	-	0.0104
	TRIR	Rate	0.3345	0.5078	1.1025
	LTIR	Rate	0.1774	0.2132	0.3640
Process Safety ⁵	PSE ⁶	Case	5	-	1
	PSER ⁷	Rate	0.0135	-	0.0035
Transport Incidents	Road	Case	1	1	1
	Rail	Case	-	-	-
	Ship	Case	1	-	-

- ¹ The accident rate is calculated by applying actual hours worked from 2022 onward.
- ² Fatality Rate: Total number of fatality cases * 200,000 / total hours worked
- ³ Total Recordable Incident Rate: Total number of recordable incidents * 200,000 / total hours worked
- ⁴ Lost Time Incident Rate: Total number of lost time incidents * 200,000 / total hours worked
- ⁵ Process safety events are calculated based on the standards set in the Accident Index, which includes injuries, fires, leakages, amount of loss, etc.
- ⁶ Process Safety Events
- ⁷ Process Safety Event Rate: Number of process safety events * 200,000 / total hours worked

Diversity, Equity & Inclusion		Unit	2020	2021	2022
No. of Employees ¹ by Region	Total	Person	18,244	18,792	19,627
	Korea	Person	12,552	13,906	14,572
	China	Person	4,394	3,564	3,705
	Asia-Pacific (excl. China)	Person	706	627	578
	Europe	Person	318	419	471
	Americas	Person	274	276	301
No. of Executives ²	Total	Person	110	110	113
	Male	Person	104	101	103
	Female	Person	6	9	10
No. of Employees by Employment Contract (Korea)	Non-fixed term	Person	12,402	13,652	14,249
	Fixed-term	Person	150	254	323
No. of Employees by Gender (Korea)	Male	Person	10,826	11,946	12,356
	Female	Person	1,726	1,960	2,216
	Ratio of female employees (non-fixed term)	%	14	14	15
	Ratio of female employees (incl. fixed-term)	%	14	14	15
	No. of Employees by Age (Korea, non-fixed term employees)	Under 30	Person	2,375	2,441
	30 to 49	Person	7,718	8,655	9,110
	50 or above	Person	2,309	2,556	2,631
No. of Leaders in Revenue Generating Positions (Korea)	Male Leaders ³	Person	699	833	910
	Female Leaders	Person	65	81	96
	Ratio of Female Leaders	%	9	9	10
No. of Employees R&D Positions (Korea, non-fixed term)	Male	Person	1,704	1,821	2,004
	Female	Person	800	855	962
	Ratio of Female	%	32	32	32
Social Minorities	Persons with disabilities ⁴	Person	330	252	250
	National veterans	Person	276	270	286
Gender Pay Gap ⁵	Non-management level (base salary)	%	76	77	80
	Management ⁶ level (base salary)	%	93	94	94
	Management level (base salary + cash incentives)	%	94	94	94
	Executive level (base salary)	%	90	93	86
Parental Leave	Total number of employees due to return to work after taking parental leave	Person	101	129	157
	Male	Person	22	46	60
	Female	Person	79	83	97
	Total number of employees that did return to work after parental leave	Person	101	129	157
	Male	Person	22	46	60
	Female	Person	79	83	97

- ¹ Calculated based on the number of employees at the end of the fourth quarter of each year.
- ² Refers to executive officers and registered directors at the vice president level and above.
- ³ Refers to employees at the positions of team leader and above, excluding executives.
- ⁴ Figures represent the number of employees reported to the Korea Employment Agency for Persons with Disabilities. Figures of 2020 are before the spin-off of LG Energy Solution.
- ⁵ Ratio of average female to male compensation, calculated by dividing the average compensation of all women in a position by the average compensation of all men in the same position. There are no distinctions based on gender, while factors such as years of service contribute to the pay gap.
- ⁶ Refers to employees at the level of professionals/senior managers or above, excluding executives.

Employee Hires		Unit	2020	2021	2022
New Employee Hires Total	Total	Person	1,166	3,140	2,651
	Korea	Person	402	1,560	1,431
	excl. Korea	Person	764	1,580	1,220
by Employment Contract (Korea)	Non-fixed term	Person	319	1,330	1,261
	Fixed-term	Person	83	230	170
by Gender (Korea)	Male	Person	320	1,255	1,070
	Female	Person	82	305	361
by Age (Korea)	Under 30	Person	187	759	849
	30 to 49	Person	144	635	469
	50 or above	Person	71	166	113

Employee Turnover		Unit	2020	2021	2022
No. of Voluntary Turnover (Korea)	Total	Person	270	306	344
by Gender (Korea)	Male	Person	239	245	257
	Female	Person	31	61	87
by Age (Korea)	Under 30	Person	107	133	161
	30 to 49	Person	152	158	173
	50 or above	Person	11	15	10

Training and Development		Unit	2020	2021	2022
Training Hours ❶ (Korea, non-fixed term employees)	Total	Hour	425,420	567,604	506,803
	Male	Hour	362,611	449,714	412,266
	Female	Hour	62,809	117,890	94,537
	Average training hours per employee	Hour / Person	34.3	41.6	35.6
Mandatory Training Hours (Korea)	Total	Hour	77,558	69,170	95,990
	Male	Hour	73,304	57,675	86,004
	Female	Hour	4,254	11,496	9,986
Training Cost (Korea)	Total	KRW 10K	1,253,990	1,564,100	2,139,966
	Average training cost per employee	KRW 10K / Person	101	115	150

Labor and Human Rights		Unit	2020	2021	2022
Labor Union (Korea)	No. of employees eligible to join	Person	6,745	7,337	7,447
	No. of employees participating	Person	5,075	5,436	5,410
	Percentage of employees participating	%	75	74	73
Percentage of Employees Covered by Collective Agreements (Korea)	%	100	100	100	

Supply Chain Management		Unit	2020	2021	2022
No. of Suppliers	Total no. of suppliers ❶	#	1,252	1,262	1,433
	Total no. of key suppliers ❷	#	216	240	178
ESG Self-Assessment	No. of suppliers that completed self-assessment	#	163	232	762
	No. of key suppliers that completed self-assessment	#	46	53	77
On-site ESG Audit	No. of high-risk suppliers ❸ subject to on-site audit	#	39	42	169
	No. of high-risk suppliers that completed on-site audit	#	-	-	17
	No. of high-risk key suppliers subject to on-site audit	#	11	-	1
	No. of high-risk key suppliers that completed on-site audit	#	-	-	-

- ❶ Suppliers refer to domestic and overseas suppliers with records of annual purchase amount of KRW 100M or more and 3 or more POs issued.
- ❷ Key suppliers refer to suppliers in the top 90% of purchase amounts, including companies of all sizes.
- ❸ High-risk suppliers refer to suppliers who fall under high risk rating as a result of self-assessment, or fall into the high-risk group due to a score below the standard, findings of critical non-conformance items, and etc.

Local Communities and Social Contributions		Unit	2020	2021	2022
Social Contributions	Total	KRW 100M	15,132	16,194	21,725
	Charitable donations	KRW 100M	13,288	15,216	21,072
	Community investments	KRW 100M	1,314	496	540
	Commercial initiatives	KRW 100M	531	482	113
Employee Volunteer Hours	Hour	4,879	4,965	3,371	

Ethics, Anti-Corruption, and Fair Trade		Unit	2020	2021	2022
Corruption	No. of investigated cases	Case	5	7	14
	No. of handled cases	Case	2	3	4
Unfair Trade Practices	No. of legal investigations	Case	1	-	-
	No. of legal actions	Case	-	-	-
Ethics Training	No. of employees participating in Jeong-Do management ❶ training	Person	12,511	13,431	15,159
	No. of employees participating in fair trade ❷ training	Person	14,444	14,413	15,191

- ❶ Includes content on Jeong-Do management and the Code of Ethics.
- ❷ Includes content on subcontractors and compliance.

Information Security and Cybersecurity		Unit	2020	2021	2022
Information Security Training		Site	4	4	16
Information Security Training	Awareness activities	#	12	12	12
	Average training hours per employee	Min	30	30	30

Public Policy and Regulation		Unit	2020	2021	2022
Contributions to Trade Associations ❶		KRW 1M	2,091	2,223	2,497
Contributions to Political Campaigns ❷		KRW 1M	-	-	-

❶ Contributions have been made to the following top 5 organizations in 2022:

- World Economic Forum (WEF) : 431,259,000 (KRW)
- Korea Association of Business Executives : 331,082,000 (KRW)
- PC/BPA Council : 291,471,000 (KRW)
- Korea Petrochemical Association : 206,088,000 (KRW)
- Korea Vinyl Environmental Council : 202,500,000 (KRW)

❷ The Political Funds Act prohibits companies to sponsor political organizations.

Tax Strategies		Unit	2020	2021	2022
Total Reported Taxes ❶	Total	KRW 1M	367,839	1,235,790	641,482
	Korea	KRW 1M	692,538	672,683	747,539
	Asia (excl. Korea)	KRW 1M	290,065	565,833	389,245
	Europe	KRW 1M	6,800	- 61,505	186,016
	Americas	KRW 1M	53,112	2,421	4,141
	Others	KRW 1M	141	39	247
	Consolidated Adjustments	KRW 1M	- 674,817	56,319	- 685,706
Cash Payment on Corporate Tax		KRW 1M	513,128	1,281,796	1,707,449

❶ Based on consolidated financial statements from 2022.

Customer Satisfaction		Unit	2020	2021	2022
Customer Satisfaction Survey	Scope ❶	%	100	100	100
	Score	Score	80	79	84

❶ Refers to the percentage of business units that have conducted customer satisfaction surveys. Since 2020, the Customer Value Innovation Team has been conducting customer satisfaction surveys for customers across all business units.

Other Economic Performances		Unit	2020	2021	2022
Revenues	Total revenue	KRW 1M	29,984,350	42,599,284	51,864,888
	Petrochemicals	KRW 1M	14,015,584	20,175,492	21,151,355
	Advanced Materials	KRW 1M	2,547,495	3,202,981	3,435,076
	Life Sciences	KRW 1M	658,277	690,346	849,289
	LG Energy Solution	KRW 1M	12,363,524	17,803,863	25,586,365
	Common and others	KRW 1M	399,470	726,602	842,803
Revenue excluding LG Energy Solution, and Common and others ❷		KRW 1M	17,221,356	24,068,819	25,435,720
R&D Expenses	Total	KRW 1M	719,339	710,071	869,634
	Sustainability technology/product development ❸	KRW 1M	34,368	90,250	134,604

❶ Based on consolidated financial statements of FY 2022.

❷ Represents simple deductions of revenues of LG Energy Solution and Common and others from total, this figure has been used to calculate intensity of environmental performance data; Common and others include revenues of FarmHannong. For details, please refer to the notes to the consolidated financial statements.

❸ Includes expenses for projects in the areas of bio materials, recycling, and carbon neutrality.



GRI INDEX

GRI INDEX

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SASB INDEX

Topic	Code	Accounting Metric	Disclosures
Greenhouse Gas Emissions	RT-CH-110a.1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	5,489,590 tCO ₂ e, 97% (emissions in Korea subject to K-ETS relative to global Scope 1 emissions)
	RT-CH-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	LG Chem promotes direct reduction investments by taking into account the emission characteristics of each process. Upstream carbon emissions will be reduced by introducing mid- to long-term innovative technologies such as CCUS (Carbon Capture Utilization and Storage) and electrolytic furnaces at NCC (Naphtha Cracking Center) plants, while downstream carbon emissions will be reduced by managing energy demand, via switching to low-carbon fuels, introducing high-efficiency equipment, and recovering and utilizing unused energy.
Air Quality	RT-CH-120a.1	Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)	(1) 3,823 tons (2) 240 tons (3) 1,206 tons (4) 298 tons
Energy Management	RT-CH-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy	(1) 151,401 TJ (2) Domestic 13%, Overseas 59% (3) Domestic 1.7%, Overseas 44% (4) 1,470 GWh
Water Management	RT-CH-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	(1) 74,772,006 m ³ , 6% (Percentage of water withdrawn from regions with water stress) (2) 53,581,878 m ³ , 5% (Percentage of water consumption from regions with water stress)
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	4 incidents
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	As problems of water scarcity intensify throughout the world, so does the need for intelligent water management. We manage water use at our business sites every step of the way, from water withdrawal through the manufacturing stage, which includes raw material processing and cooling, to the discharge of properly treated wastewater. In particular, we aim to identify and minimize the amount of water withdrawal and consumption in water-stressed areas.
Hazardous Waste Management	RT-CH-150a.1	Amount of hazardous waste generated, percentage recycled	(1) 128,663 tons (2) 89% (incl. incineration w/ heat recovery) 62% (excl. incineration w/ heat recovery)

Topic	Code	Accounting Metric	Disclosures
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	We aim to build close relationships with local communities by thoroughly managing the environment and safety around our business sites, providing employment and development opportunities to local communities, and running partnership programs. We also engage a wide range of stakeholders through employee volunteer works and community partnership programs.
Workforce Health & Safety	RT-CH-320a.1	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	(1) (a) 0.6079 (b) 1.1025 (2) (a) 0 (b) 0.0104
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	LG Chem makes environment, health, and safety its top management priorities and core tasks, and has established corporate-wide environmental and safety regulations and guidelines.
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency	19% (Excluding revenues from LG Energy Solution)
Safety & Environmental Stewardship of Chemicals	RT-CH-410b.1	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	(1) 33.93 % (2) 82.38 %
	RT-CH-410b.2	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	(1) In accordance with our product environmental management guidelines, we rigorously identify substances requiring supervision from the raw material stage on. Hazardous substances are categorized as one of three types depending on their risk level, and we have an operational system to ensure that all such materials can be purchased only after confirming the details of their respective management requirements. We also observe the percentage of products containing restricted substances (Annex 17), SVHC substances, and CMR substances under REACH, and proactively check for hazardous risks. (2) By integrating information of product ingredients into a Bill of Substance (BoS) management system, we are constantly monitoring whether and how many hazardous substances are contained in the products we produce and sell. We are stepping up our efforts to reduce the harmful substances contained in our products, and we have also introduced a process to identify product toxicity as one of the Sustainable Value criteria for classifying products with distinguished social and environmental values in terms of sustainability from the product design stage.

Topic	Code	Accounting Metric	Disclosures
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	N/A
Management of the Legal & Regulatory Environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	We are constantly seeking out public-private partnerships by identifying policy issues and regulations that may affect our business and pursuing government proposals. We participate in policy-making through our local public affairs networks at home and overseas, and continuously monitor new legislation and policies that may affect our global business. We also belong to domestic and overseas industry associations that represent our business areas, through which we convey industry opinions, and collaborate with various stakeholders by engaging in professional networking activities like external seminars, forums, and conferences. We secure incentives in connection with major investments, maintain and identify quota tariffs, and conduct policy support activities related to growth engines.
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	Number of Process Safety Events (PSEs) : 1 Process Safety Event Rate (PSEER) : 0.0035
	RT-CH-540a.2	Number of transport incidents	1



TCFD INDEX

Recommendations	Disclosures
Governance	
a. Describe the board's oversight of climate-related risks and opportunities.	In April 2021, LG Chem established the ESG Committee to integrate into all of its practices the concept of sustainability, which encompasses both financial (growth) and non-financial (ESG) aspects, as a core value for growth. In line with our Diversity Principle, more than two thirds of the committee is comprised of independent directors that neither have common backgrounds, nor represent specific interests. As of 2022, the chairperson of LG Chem's ESG Committee is an independent director, and the company is working to achieve greater sustainability and diversity by appointing two new female independent directors. To solidify the ESG management system, the Committee meets twice a year (once each in the first and second halves) to solicit sustainability-related opinions, and report on and resolve major ESG issues. The committee discusses the company's fundamental sustainability policies, mid- to long-term goals, and ESG management strategies. The committee also checks the performance of its activities for the Net-Zero goal, which it reports regularly to the BOD. Recognizing the growing importance of ESG management and compliance on the global stage, LG Chem has decided to bolster the compliance review function of the BOD through the ESG Committee.
b. Describe management's role in assessing and managing climate-related risks and opportunities.	LG Chem's management established the Chief Sustainability Strategy Officer (CSSO) in 2021 to reinforce a systematic and professional approach to achieving sustainability. As the control tower on corporate-wide sustainability issues, the CSSO is responsible for accelerating sustainable management practices, actively communicating with stakeholders, and creating viable solutions grounded in science and technology. The CSSO monitors carbon reduction implementation results and performance of key sustainability indicators at least semi-annually, and reports them to the CEO. In addition, the CSSO leads the establishment and implementation of the corporate-wide sustainability management strategy by specifying the course of low-carbon business transformation measures and R&D by business division.
Strategy	
a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	LG Chem proactively identifies and assesses the actual and potential impacts of climate change across the entire value chain. In the short-term, we recognize carbon emission regulations, extreme weather events, and changing consumer perceptions as risk factors. The uncertainty of domestic emission allowance allocations and the intensification of regulations around the world are both major transition risks with potential financial impacts, while the growing frequency and intensity of extreme weather events is a major physical risk that may affect business operations like raw material procurement and production. Potential mid- to long-term risks include rising temperatures, and increased internal operating costs due to our efforts to reduce GHG emissions in and around our business sites. Nevertheless, we also believe that greater customer demand for low-carbon products is a powerful opportunity, and are reorganizing our business portfolio around sustainability.
b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	LG Chem introduced an internal carbon price (ICP) to proactively identify financial risks arising from future carbon emissions and accelerate the transition to a low-carbon management system. ICP is mainly used for mid- to long-term business planning and investment review. We are actively incentivizing carbon reduction activities and investments by applying a carbon price that exceeds the current price of emission allowances in our mid- to long-term business planning, and accounting for regulatory costs associated with carbon emissions in our investment economic analysis. In doing so, we are proactively responding to the uncertainty with allocations of domestic emissions allowances, and the trend toward stricter carbon-related regulations on a global scale.
c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	To keep pace with sustainable growth as a Top Global Science Company, LG Chem has set a goal of Net-Zero by 2050. To achieve this, we have established an internal carbon reduction roadmap, starting with BAU refinement work, and have materialized action plans. We have also joined the Science-Based Targets initiative (SBTi) to demonstrate our leadership and commitment to carbon neutrality, and are working to establish emission reduction targets based on the 1.5°C pathway.

Recommendations	Disclosures
Risk Management	
a. Describe the organization's processes for identifying and assessing climate-related risks.	LG Chem identifies risks and opportunities centered on five key sustainability tasks: climate action, renewable energy transition, circular economy, environmental protection, and responsible supply chain. We conduct simulations of the financial impacts of changes in the external policy and regulatory environment (e.g. the adjustment of emission quotas, the introduction of carbon border taxes), and review data trends in indicators like GHG emissions and energy consumption, on a regular basis.
b. Describe the organization's processes for managing climate-related risks.	LG Chem is the first Korean company in the industry to establish an integrated carbon management system, the Net-Zero Management System (NZMS). We use NZMS as an important tool for business decision-making, comparing and reviewing the economic feasibility of investments for each carbon reduction task, and conducting simulations considering changes in the external environment (e.g. in the price of carbon credits). We also regularly report these issues to the BOD to strengthen corporate governance and develop board-centered responsible management practices that allow for a robust response to climate change.
c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	LG Chem has established a corporate-wide organic structure of cooperation to accelerate sustainability and push for efficient implementation. We operate a dedicated sustainability organization under the CSSO to analyze domestic and global legislative and regulatory trends, as well as changing global megatrends and stakeholder requirements, and thereby identify areas of improvement and check the status of ESG projects for each department within the organization. Major sustainability issues like climate change are discussed at management meetings involving the C-Level (monthly) and the ESG Committee meetings with the BOD (bi-annually), and integrated into the corporate-wide compliance, risk identification, inspection, and evaluation processes in line with the strengthening of ESG regulations.
Metrics and Targets	
a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	In 2019, LG Chem established a sustainability vision and strategy centered on nine core areas. In 2020, we declared our mid- to long-term goals, which centered on five key sustainability tasks, including carbon-neutral growth. In 2021, to invigorate communications with various stakeholders and strengthen competitiveness, LG Chem selected 20 key indicators to prioritize in terms of environmental, social, governance, and growth, based on the concept of stakeholder capitalism as proposed by the World Economic Forum (WEF), and we are staying abreast of global megatrends and stakeholder demands as they evolve year to year.
b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Scope 1: 5,638,675 tCO ₂ e Scope 2: 4,404,614 tCO ₂ e Scope 3: 1,213,600 tCO ₂ e
c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	In February 2022, LG Chem advanced its carbon-neutral growth goal by 20 years and announced a new target of "2030 Carbon-neutral Growth" and "2050 Net-Zero" for Scope 1 and 2 emissions. To achieve this new goal, LG Chem is actively promoting new processes like switching to eco-friendly raw materials and fuels, and expanding the use of renewable energy. To enhance the low-carbon competitiveness of our products, we are establishing a management system for the voluntary area of emissions reporting (Scope 3) beyond the regulated areas (Scope 1 and 2).

ASSURANCE STATEMENT

LRQA INDEPENDENT ASSURANCE STATEMENT

Relating to LG Chem, Ltd.'s Sustainability Report for the calendar year 2022

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

LRQA was commissioned by LG Chem, Ltd. (LG Chem) to provide independent assurance on its 'LG Chem Sustainability Report 2022' ("the report") against LG Chem's data management procedure to a "limited level of assurance and materiality of professional judgement" using ISAE 3000 and ISAE 3410.

Our assurance engagement covered evaluating the accuracy and reliability of ESG performance data and information on pages 158-167 in the report relating to LG Chem's operations and activities in domestic and overseas sites^① from 1 January 2022 to 31 December 2022.

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

LRQA's responsibility is only to LG Chem. LRQA 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.

LRQA's Opinion

Based on LRQA'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.

LRQA's approach

LRQA'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:

① Our engagement excluded verification of direct and indirect GHG emissions, and energy consumptions of overseas sites.

- 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 (Scope 1) and indirect (Scope 2) GHG emissions, and energy consumptions in domestic sites were transposed correctly from the GHG inventory which was verified by the third-party assurance provider.
- Verifying other indirect GHG emissions (Scope 3) based on GHG Protocol - Corporate Value Chain (Scope 3) Accounting and Reporting Standard
- Checking whether financial data were transposed correctly from the financial statements.
- Reviewing additional evidence made available by LG Chem at its head office in Seoul.

LRQA's standards, competence and independence

LRQA 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.

LRQA 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.

LRQA 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 LRQA for LG Chem and as such does not compromise our independence or impartiality.

Dated: 29 June 2023

Tae-Kyoung Kim
LRQA Lead Verifier
On behalf of LRQA
2nd Floor, T Tower, 30, Sowol-ro 2-gil, Jung-gu, Seoul, Republic of Korea
LRQA reference: SEO00000269

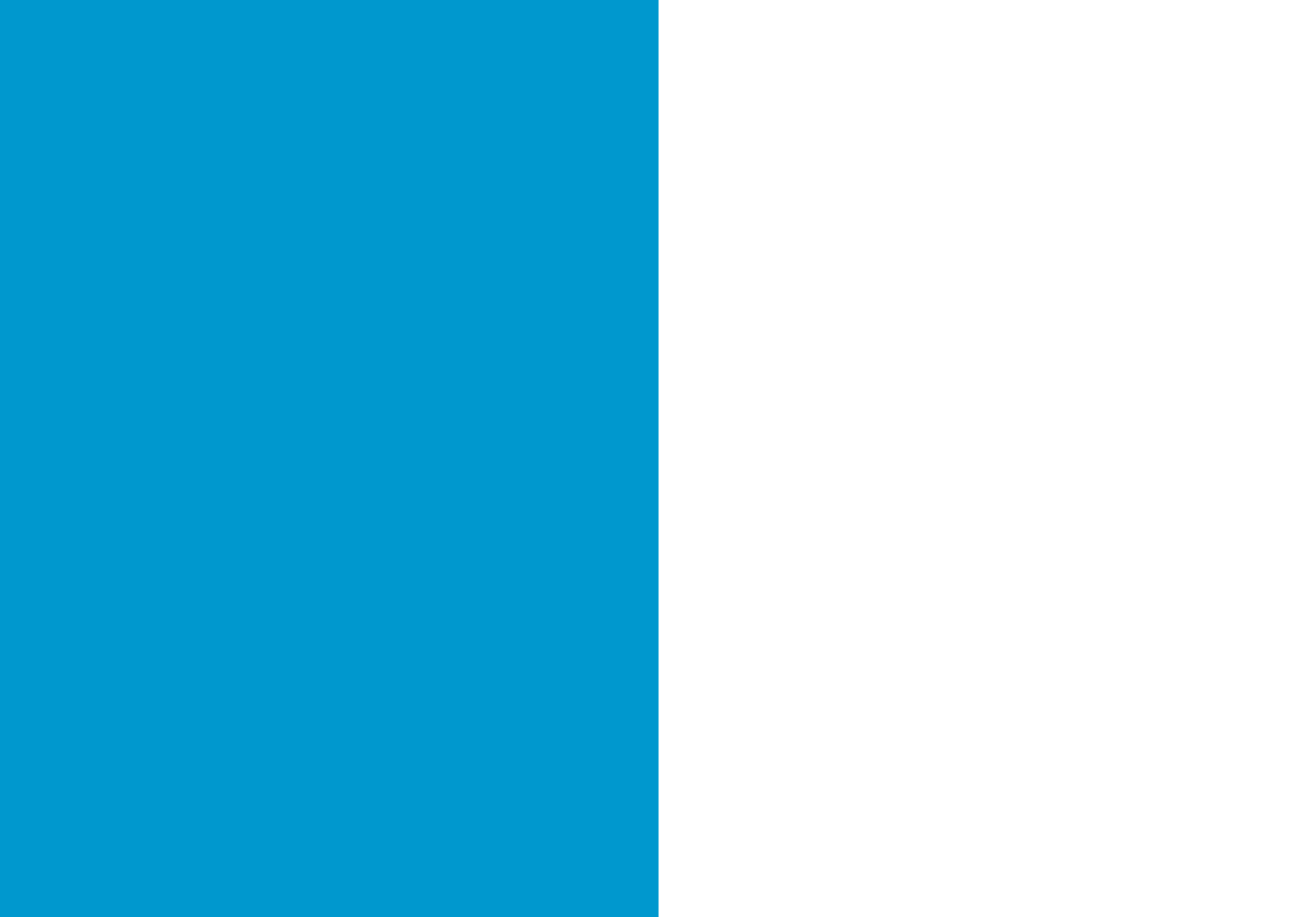
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We value your feedback. We welcome any questions, comments or suggestions you may have regarding this report and our performance.

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Related Information

[Annual Business Report](#)

[Corporate Governance Report](#)

[LG Code of Ethics](#)

[Compliance Guideline](#)

[Responsible Sourcing Policy](#)

[Supplier Code of Conduct](#)

[Global Human Rights and Labor Policy](#)

[Social Partnerships](#)

[LETZero Product Book](#)

