



LG Chem, Ltd.

GREEN FINANCING FRAMEWORK

March 2019

1. Background

LG Chem, Ltd. (“LG Chem” or the “Company”) is a major producer of a diverse mix of commodity and specialty chemicals, and also a leading manufacturer of batteries, LCD panel materials and pharmaceutical products. The company ranks as one of the top producers globally for PVC and ABS, and is the third-largest producer of small-sized battery while holding a strong global market share in hybrid and electric vehicle (xEV) batteries.

Having continued to grow over 7 decades since founded in 1947, LG Chem has built the global network for production, sales and R&D not only in Korea, but also in main bases across the world to provide globally competitive products. As of end-2018, LG Chem operates a global network of 40 manufacturing plants, 19 overseas marketing subsidiaries and 6 representative offices in 18 countries.

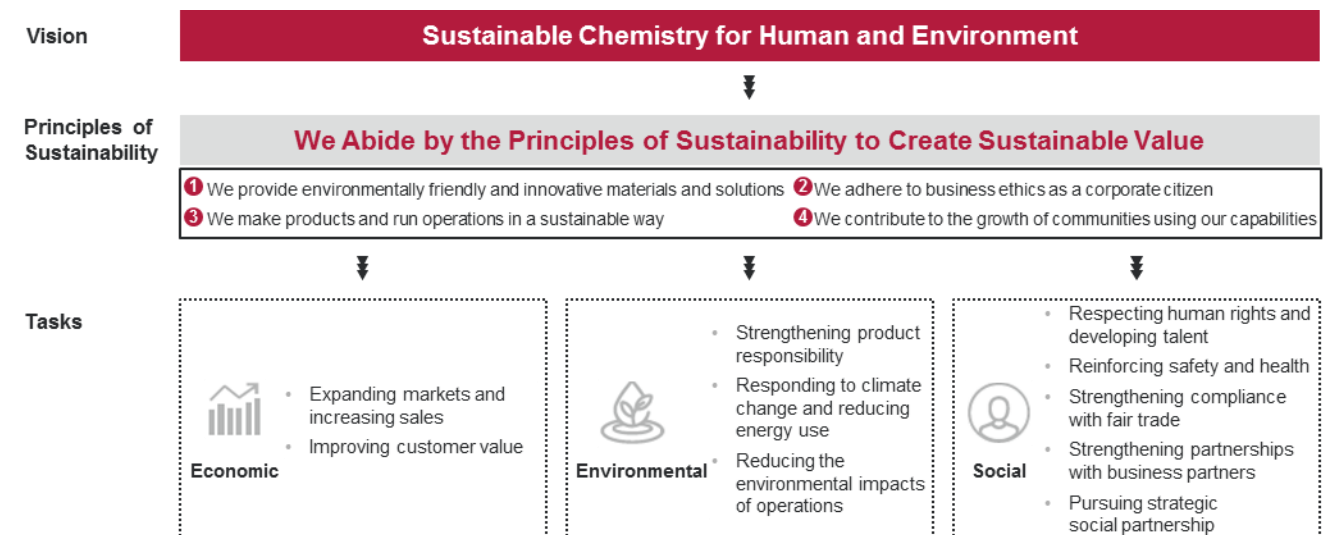
The company has strengthened market dominance starting from the Basic Materials & Chemicals business to Energy Solution, IT and Electronic Materials, and has expanded its business into Life Science area, building a future-oriented business portfolio. In the long term, the company will build the foundation for sustainable growth by selecting and concentrating on the ‘energy’, ‘water’ and ‘bio’ businesses as the new growth engines. Especially, on the back of rapidly rising demand for electric vehicle batteries, LG Chem is partnering with global automakers to support low carbon transition.

LG Chem is committed to becoming a global company that realizes the vision of “growing with customers by providing innovative materials and solutions” and provides new values to customers.

LG Chem’s Sustainability Business Strategy

LG Chem’s sustainability management covers all business activities aligned with corporate strategic directions. LG Chem has promoted sustainability management based on four principles and ten key tasks in economy, environment, and society under the vision of the “Sustainable Chemistry for Human and Environment.”

Sustainability Management System



Sustainability Management Aligned with SDGs

As a member of the UN Global Compact, LG Chem actively supports the Sustainable Development Goals (“SDGs”). LG Chem will contribute to the sustainable development of the world by aligning its business with the SDGs.

Sustainable Development Goals	Description	LG Chem's Activities
 2 ZERO HUNGER	Zero Hunger End hunger, achieve food security and improved nutrition and promote sustainable agriculture	<ul style="list-style-type: none"> • LG Chem enters the green bio market to provide solutions to the food shortage problem in the future • LG Chem holds the No.1 share in the domestic crop protection agents market, promoting a seed business
 3 GOOD HEALTH AND WELL-BEING	Good Health and Well-being Ensure healthy lives and promote well-being for all at all ages	<ul style="list-style-type: none"> • LG Chem has entered the red bio market to develop medicines that contribute to promoting human health • LG Chem has entered the UN public market to develop new medicines and vaccines for the prevention of various diseases
 4 QUALITY EDUCATION	Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<ul style="list-style-type: none"> • Based on its social contribution policy 'LG that makes young dreams come true', LG Chem promotes social contribution activities that focus on youth education • Chemistry Camp: 4 times, around 400 participants (as of January 2018) • Fun Chemistry Park: 8 times, 1,500 participants
 6 CLEAN WATER AND SANITATION	Clean Water and Sanitation Ensure availability and sustainable management of water and sanitation for all	<ul style="list-style-type: none"> • Through the water treatment business including RO Membrane, LG Chem contributes to overcoming the shortage of water at the global level and provides clean water
 7 AFFORDABLE AND CLEAN ENERGY	Affordable and Clean Energy Ensure access to affordable, reliable, sustainable and modern energy for all	<ul style="list-style-type: none"> • LG Chem expands the supply of eco-friendly electric vehicles through the production of automobile batteries and ESS batteries, and contributes to building sustainable cities and ecosystems by expanding the supply of new and renewable energy sources • LG Chem is building 'Power Plant for Green Hope' in Jungnang Water recycling center/14,049m2 of space, facility with 620kW of capacity
 8 DECENT WORK AND ECONOMIC GROWTH	Decent Work and Economic Growth Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	<ul style="list-style-type: none"> • LG Chem has increased operating profits thanks to the continued strong growth in the basic materials division, the robust sales of electric vehicles, and the increased sales of ESS batteries in the energy solutions division, consequently contributing to creating quality jobs • LG Chem operates the LG Social Campus, a platform that supports social-economic integration, to provide various forms of support: Financial support, spaces for offices, business growth, benchmarking the cases of overseas, holding seminars
 10 REDUCED INEQUALITIES	Reduced Inequalities Reduce inequality within and among countries	<ul style="list-style-type: none"> • LG Chem is engaged in activities to promote youth education and welfare and to clean up the environment in overseas • LG Chem hosted the Chinese College Student Contest on Innovation and Creativity for Automotive Batteries (LGCCI) • LG Chem is engaged in Love School Project, and repairs library of Moon-Young Middle School, Ganzhou (LGCCI)
 13 CLIMATE ACTION	Climate Action Take urgent action to combat climate change and its impacts	<ul style="list-style-type: none"> • The government has finalized its 2030 target of reducing greenhouse gas emissions by 37 percent compared with Business As Usual (BAU)
 15 LIFE ON LAND	Life on Land Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	<ul style="list-style-type: none"> • For Biological diversity, LG Chem has operated 4 times of the Brighter Future, LG Chem's Green World, and 200 employees have participated for this activity
 16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Peace, Justice and Strong Institutions Promote just, peaceful and inclusive societies	<ul style="list-style-type: none"> • LG Code of Ethics is served as the foundation for all employees and business sites at home and abroad • LG Chem fulfills its responsibility on respecting human dignity according to the Global Human Rights and Labor Policy

Source: LG Chem 2017 Sustainability Report (Summary).

Protecting Our Planet

LG Chem actively responds to climate change around the globe by exploring important issues and seizing opportunities to make positive changes. The company is conserving energy by reducing greenhouse gas (“GHG”) emissions and producing high value, low-energy consumption products. LG Chem applies its resources to facilitate myriad problems associated with climate change, which has allowed the company to expand its business portfolio through R&D projects. LG Chem’s business portfolio is expanding to include energy, water and biotechnology. The company’s electric vehicle batteries and energy storage system (“ESS”) are subsidizing a sustainable ecosystem.

A. GHG Reduction

Setting GHG Reduction Target: LG Chem has established greenhouse gas reduction goals as well as a 23% reduction of BAU by 2020 and mid/long-term energy intensity saving goals with an overall aim to reduce greenhouse gas emissions and energy consumption. LG Chem continues improvement activities to achieve the goals and has consequently achieved its annual reduction goal every year. We are establishing long-term plans for greenhouse gas reduction and energy use after 2020 and are considering plans to expand the use of new and renewable energy to introduce eco-friendly energy sources. In the future, LG Chem will continue its activities to reduce greenhouse gas emissions and save energy in line with the 2030 national roadmap for greenhouse gas reduction.

B. Developing Sustainable Products

LG Chem contributes to the corporate and social response to climate change by developing products for the sustainable development of society. The company is concentrating its research and development capabilities on developing products that can protect the environment and our planet by creating sustainable automotive and ESS batteries, water treatment filters, and, overall, improving their performance.

Automotive battery

LG Chem contributes to the spread of ecofriendly electric vehicles through the production of automotive batteries. The company’s automotive batteries have gained a competitive edge in the EV battery market with major Supplier Awards by global automakers and secured orders of key electric vehicle projects.

ESS battery

Our ESS batteries maintain a strong global partnership by expanding orders for large-scale power grid projects and entering into a long-term supply contract with major power generation companies, and contribute to the efficient use of renewable energy sources.

RO membrane

Through the water treatment business, we contribute to overcoming the shortage of water at the global level and strive to make everyone drink clean water.

2. LG Chem Green Financing Framework

The aim of this Green Financing Framework is to facilitate transparency, disclosure, integrity and quality in LG Chem’s Green Bond/Loan for interested investors and stakeholders. LG Chem intends to issue Green Bond/Loan to fulfill its environmental responsibilities, financing investments and R&D activities that contribute to sustainable development by earmarking the proceeds for projects and expenditures that fall within the Eligible Categories.

The Green Financing Framework (“Framework”) has been developed to address the four key pillars in line with the ICMA Green Bond Principles (“GBP”) and Green Loan Principles (“GLP”);

1. Use of Proceeds
2. Process for Projects Evaluation and Selection
3. Management of Proceeds
4. Reporting

The Framework may be subsequently revised or updated as the green finance market continues to evolve.

The framework also covers External Review.

2.1 Use of Proceeds

An amount equal to the net proceeds of LG Chem’s Green Bond/Loan will be used to finance and/or refinance, in whole or in part, new or existing projects (“Eligible Projects”) from any of the Eligible Project Categories as defined below:

Eligible Project Categories

Eligible Project Categories	Eligible Criteria	Example / Eligible Projects	UN SDG
Low Carbon Transportation	<ul style="list-style-type: none"> • Development, manufacturing, acquisition of low carbon transportation components 	<ul style="list-style-type: none"> • Capital investment for construction of manufacturing facilities and R&D on batteries for electric vehicles, bicycles, and motorcycles¹ 	Goal 11: Sustainable cities and communities
Energy Efficiency	<ul style="list-style-type: none"> • Promote energy savings and increases efficiency of energy use 	<ul style="list-style-type: none"> • Capital investment for construction of manufacturing facilities and R&D for Energy Storage System(ESS) design • Development of organic LED materials • Expenditures aiming to improve the energy efficiency of LG Chem’s corporate and 	Goal 7: Affordable and Clean Energy

¹ Majority of batteries will be manufactured for electric vehicles, plug-in hybrids, and low emitting hybrids with emissions below 75g CO₂/km

		<p>manufacturing facilities or internal supply chain, including but not limited to:</p> <ul style="list-style-type: none"> - Installation of ESS - Installation of LED lighting, solar panel or improvement to ventilation systems 	
Sustainable Water and Wastewater Management	<ul style="list-style-type: none"> • Solutions that promote the sustainable management of water resources 	<ul style="list-style-type: none"> • Capital investment for construction of manufacturing facilities and R&D for Water Treatment Membrane including RO Membrane • Expenditures for water treatment aiming to improve water reuse rate, minimize discharge of water pollutants at LG Chem’s corporate and manufacturing facilities 	Goal 6: Clean water and sanitation
Green Building	<ul style="list-style-type: none"> • Construction and renovation of Green Buildings that qualified for recognized Green Building Standards² 	<ul style="list-style-type: none"> • Construction and Renovation of Green Buildings with LEED Gold or higher or G-SEED 2 or higher (Green Standard for Energy and Environmental Design) that is based on Act on Development and Support of Green Building 	Goal 11: Sustainable cities and communities

Exclusionary Criteria

Proceeds from LG Chem’s Green Bond/Loan will not be allocated to the following projects and/or activities:

- Luxury sectors (precious metals wholesale or brokerage, precious minerals wholesale or brokerage, artworks and antiques wholesale or brokerage, golf course services);
- Child labour;
- Adult entertainment;
- Weapon;
- Alcohol;
- Tobacco;
- Fossil fuel (e.g. production, distribution, remediation and associated energy efficiency technologies);
- Nuclear power;
- Large-scale hydro-power projects with a generating capacity of over 25 megawatts; and
- Biomass suitable for food production

2.2 Project Evaluation and Selection

The Project Evaluation and Selection Process is a key process in ensuring that the net proceeds raised by the LG Chem’s Green Bond/Loan are allocated to projects and assets which meet the eligibility criteria as defined in Section 2.1.

² Recognized Green Building Standards: LEED Gold or higher or G-SEED 2 or higher (Green Standard for Energy and Environmental Design) that is based on Act on Development and Support of Green Building

A dedicated Green Financing Working Group (“GFWG”) has been created to oversee the entire issuance process and to ensure that all eligible projects and assets meet the eligibility criteria defined in Section 2.1. The GFWG is composed of Business Strategy Team, Planning & Coordination Team, Safety & Environment Team, while being coordinated by Finance Department.

Annually, the GFWG will review the allocation of the Green Bond/Loan proceeds to the Eligible Projects and determine if any changes are necessary. The GFWG will ensure that all projects included under the Eligible Use of Proceeds still align with the Eligibility Criteria or determine if replacement / deletion / additions are necessary.

2.3 Management of Proceeds

The net proceeds of Green Bond/Loan will be deposited in LG Chem’s Treasury Portfolio. An amount equivalent to the net proceeds shall be allocated for the financing and / or refinancing of existing or new Eligible Projects. LG Chem’s treasury team will track the net proceeds through a separate Green Bond/Loan register that includes details on issuing terms of Green Bond/Loan and amount allocated to Eligible Projects.

The Green Bond/Loan register will be reviewed annually by the GFWG to account for any re-allocation, repayments or drawings on the Eligible Projects and expenditures within the pool.

For refinancing, the Green Bond/Loan could be used for Eligible Projects completed in the three full years prior to the Green Bond/Loan issuance year.

Pending the full allocation of the net proceeds, all or a portion of the net investments proceeds will be held in accordance with LG Chem’s general liquidity management policies. The unallocated can be invested in cash, cash equivalents, investment grade securities or other marketable securities and short-term instruments or other capital management activities.

LG Chem may issue Green Bond/Loan in any currency, jurisdiction and market reflecting its current and future business needs. The net proceeds can be swapped or hedged into different currencies subject to the company’s needs.

2.4 Reporting

The reporting will include allocation reporting and impact reporting and will be publicly available on LG Chem’s internet website.

Allocation report

The allocation reporting will be available to investors within approximately one year from the date of the bond/loan issuance and yearly thereafter until the bond/loan proceeds have been fully allocated and in case of any material changes

- Allocation per Eligible Project Categories

- Example of projects financed by the proceeds, including their description (location, category, progress) and the corresponding allocated amount (in US\$ and/or EUR)
- The balance amount of unallocated net proceeds
- Portion of financing and refinancing

Impact report

Until full allocation, LG Chem will provide annual impact reporting on relevant impact metrics for each category of Eligible Projects on a best effort basis.

Eligible Project Categories	Reporting Indicators
Low Carbon Transportation	<ul style="list-style-type: none"> • Case study of electric vehicles that use batteries supplied by LG Chem
Energy Efficiency	<ul style="list-style-type: none"> • Amount of energy saved (kWh) • CO2 (or other GHG) emissions avoided / reduced (tonnes of CO2e)
Sustainable Water and Wastewater Management	<ul style="list-style-type: none"> • Volume of seawater and brackish water purified (in tons) • Estimated annual avoided emissions of water pollutants
Green Building	<ul style="list-style-type: none"> • Type of certification and number of Green Buildings

External Reviews

Second Party Opinion

LG Chem will engage Sustainalytics to provide an independent third party to provide assurance on the Green Financing Framework and its alignment with the GBP and GLP. The opinion from Sustainalytics (“Second Party Opinion”) will be made available on LG Chem’s internet website.