

Green Financing Framework

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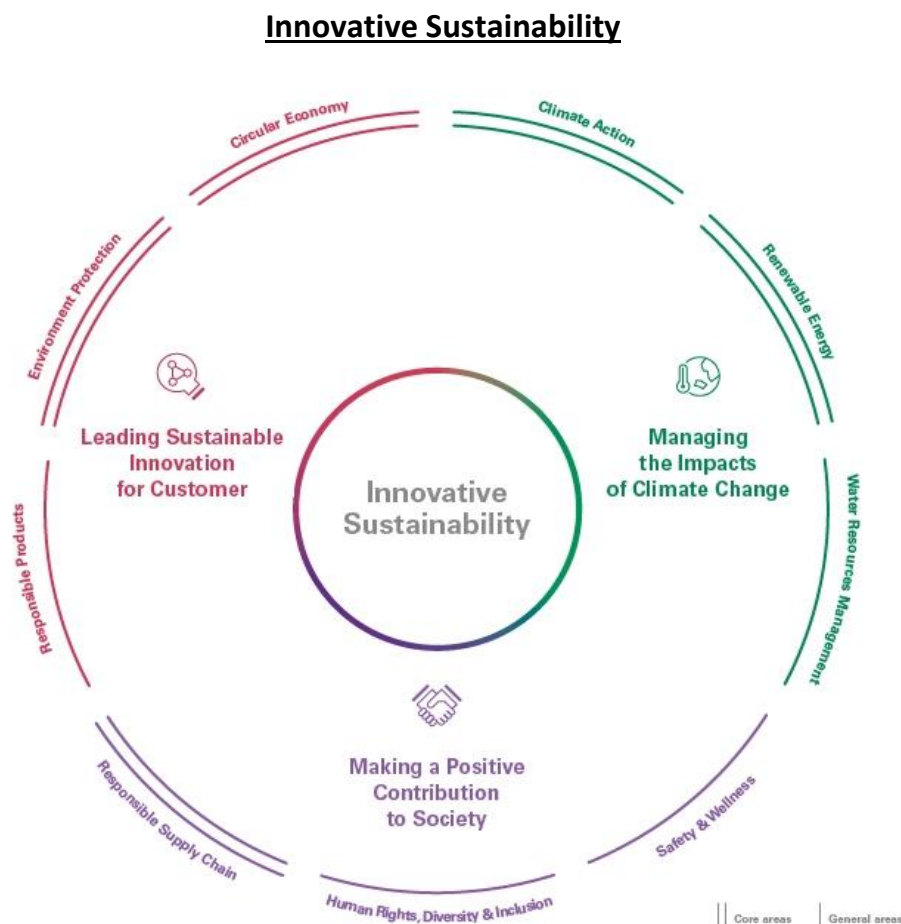
1. Overview

Since establishment in 1947, LG Chem, Ltd. (“LG Chem” or the “Company”) has sustained steady growth for more than 70 years. LG Chem has built the global network for production, sales and R&D not only in Korea, but also in main markets across the world to provide globally competitive products. Of note, LG Chem has vertically integrated petrochemical business from base materials such as ethylene and propylene to downstream products such as PE, ABS and synthetic rubber, which offers globally leading productivity level and cost competitiveness and it is leading the global lithium ion-battery market based on the differentiated material development capabilities with decades of experience as a global leader. The lithium-ion battery business is further cementing its leadership in the next generation energy market. In addition, cathode materials for secondary batteries, engineering plastic used as materials for interior and exterior parts of lightweight vehicles, advanced materials for IT products, and bioscience business with growing new drug pipeline are LG Chem’s new growth engine businesses.

LG Chem is committed to environmental sustainability. To meet this commitment, the company developed new sustainability management visions and strategy to build trust from stakeholders, and gain differentiated competitiveness.

LG Chem’s Sustainability Strategy

LG Chem’s vision of sustainability management, “Innovative Sustainability” aims to provide an innovative, and sustainable solutions for the environment and society. “Innovative Sustainability” is composed of 3 strategic directions and 9 areas. In addition, the company selected 5 core areas and established medium and long-term goals.



5 core areas and establishment of medium and long-term goals

Core Areas	Medium and Long-term Goals
Climate Action	To accomplish Carbon-neutral Growth by reducing greenhouse gas emissions
Renewable Energy	To promote Renewable Energy 100 (“RE100”)
Circular Economy	To establish a closed-loop throughout the entire value chain encompassing raw materials, production, consumption, disposal and recycle.
Environmental Protection	To apply ‘Zero Landfill’ certification mandatory to new business sites.
Responsible Supply Chain	To achieve responsible sourcing considering the environment, human rights, and ethics in the raw materials supply chain

LG Chem’s Execution Initiatives

LG Chem has been operating CSR committee since 2016. In 2019, the company enhanced the governance structure so that sustainability management agendas can be discussed at the top management meeting attended by C-level executives and representative from each business division. Moreover, the Board of Directors annually presents the current status and proposes the plans in regards to sustainability on the corporate level.

Under the framework of such strategies, visions, and governance structure, the company implements and plans to execute below initiatives to respond to various environmental issues.

2050 Carbon-neutral Growth

In 2019, LG Chem was the first in the domestic chemical industry to declare carbon neutral growth targets by 2050. This goal is to suppress carbon emissions down to approximately 10 million tons of carbon emissions by 2050, the level of emissions in 2019. This is a challenging goal achieved by reducing close to 30 million tons of carbon emissions compared to the expected 40 million tons if the business continues without any carbon reduction efforts. LG Chem aims to achieve this through efforts such as converting to renewable energy and bio-based raw materials, and introducing carbon capture and utilization technologies.

Transition to Renewable Energy 100

LG Chem is committed to 'Renewable Energy 100' by 2050 at all operations sites and have already switched the specialty polymer factory in Yeosu Complex, the Osan Tech Center in Korea, as well as the cathode raw materials plant in Wuxi, China. In detail LG Chem is planning to achieve renewable energy 100 in overseas plants by 2030 and domestic sites by 2050. At 17 domestic business sites, we will install self-generating solar power facilities to convert to renewable energy.

Renewable raw materials in use

LG Chem intends to build a Renewable raw materials in use and contribute to reduce greenhouse gas emissions by replacing oil-based plastics with those made from renewable raw materials. Through strategic partnerships with diverse companies, such as one with Neste, the world's largest biodiesel producer, we plan to incorporate bio-based materials into our high value-added products and produce a variety of low-carbon products. LG Chem is striving to rapidly commercialize products made of renewable raw materials and hopes to expand our product range through various partnerships.

Introducing Carbon Capture and Utilization Technologies

LG Chem is also reviewing the introduction of new CCU (Carbon Capture and Utilization) technologies to directly reduce carbon emissions, in the mid- to long-term. It is an innovative new technology that captures the carbon that occurs during production processes and converts it into chemicals to be used in product manufacturing.

To embrace carbon capture and use technologies, LG Chem is driving the long-term introduction of CCU through its own research capabilities as well as undertaking national initiatives, open innovation, and partnerships with global companies.

Plastic Recycling

LG Chem produces post consumer recycled plastics (PCR) that recycle waste plastics as raw materials to reduce the plastic waste that are buried and incinerated. We are also establishing a virtuous circulation of resources by reducing the use of existing fossil fuel-based raw materials. Plastic recycling is largely divided into mechanical recycling and chemical recycling

Mechanical recycling is a method of separating, sorting, and shredding plastic waste, then introducing it into existing processes to recreate plastic products. Currently, LG Chem produces PCR products with high waste plastic content in ABS and PC products, and has succeeded in improving quality by producing white plastic. In the future, LG Chem will further expand the PCR product range to include PO and PVC. For chemical recycling, the chemical conversion of waste plastics back to raw materials such as conventional naphtha can achieve equal quality to conventional raw materials, although it requires high investment costs and high technical advancement.

LG Chem aims to establish chemical recycling as our mid- to long-term strategy, securing technology and promoting product commercialization through various partnerships.

Biodegradable Plastics

Plastic waste is a global challenge, especially if it ends up in the oceans and fragmented into microplastics and degrade over centuries. LG Chem takes plastic wastes seriously and seeks to protect the ecosystem and enhance environmental sustainability by developing biodegradable plastics.

Promotion of Zero Waste to Landfill

LG Chem is pursuing 'Zero Waste to Landfill' from our business sites to reduce waste and increase its recycling rates. The electric vehicle battery production subsidiary (LGESMI) in Michigan has received 'Zero Waste to Landfill Certification' from NSF International in the United States by recycling more than 90% of its production waste.

LG Chem is adopting compulsory zero waste landfill policy in new locations, and this will be also applied sequentially to existing sites. This will also contribute to reduction in carbon emissions by reducing and recycling waste from the business site.

2. LG Chem’s Green Financing Framework

The aim of the Green Financing Framework (“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 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”);







- A. Use of Proceeds
- B. Project Evaluation and Selection
- C. Management of Proceeds
- D. Reporting

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


A. Use of Proceeds

LG Chem plans to use net proceeds from issuance of the Green Bond/Loan to finance and/or refinance, in whole or in part, the combination of new or existing projects (“Eligible projects”) that fall under the Eligible Green Categories as defined. As a member of the United Nation (“UN”) Global Compact, LG Chem actively supports the UN’s Sustainable Development Goals (“SDGs”). LG Chem will contribute to the sustainable development of the world by aligning its business with the SDGs.

List of Eligible Categories for the Use of Proceeds and SDG contribution

List of Eligible Green Category	Category Description	SDG Contribution
Renewable Energy	Capital investments and/or operating expenditures related to the manufacture of raw materials required for the development of renewable energy technology, e.g., Polyolefin Elastomer (POE), a raw material required for the development of solar encapsulant film. Spend may include the expansion of the facility to increase POE production.	
Circular Economy	Capital investments and/or operating expenditures related to the production of bio-diesel/naphtha using bio-feedstock, e.g., cooking oil waste, and etc.	 
	Capital investments and/or operating expenditures related to the production of bio-based plastic from bio-feedstock, e.g., cooking oil waste, and etc.	 
	Capital investments and/or operating expenditures related to the mechanical and chemical recycling of plastic waste.	



Clean Transportation	Capital investments and/or operating expenditures related to the manufacture of raw materials used for the developing EVs, FCEVs and ESS, e.g., CNT (Carbon Nanotube), Precursor, Cathode Materials, Separator, Separator Coating, Copper Foil, Thermal Materials and Nickel Mining/Smelting/Refining, etc.	
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B. Project Evaluation and Selection

LG Chem will designate the projects that meet the criteria of ICMA’s Green Bond Principles as well as company’s objectives set out in its sustainability management vision, “Innovative Sustainability”. The Eligible projects include all projects approved prior to the issuance of Green Bond/Loan that yet to be financed and projects approved after the date of issuance.

A dedicated Green Financing Working Group (“GFWG”) has been created to oversee the entire issuance process and to be responsible for sustainability management. The company has below process in place with regards to project evaluation and selection:

- 1) Each business unit selects the projects based on internal selection criteria
- 2) GFWG verifies the adequacy and eligibility of the selected projects
- 3) Eligible projects are approved after final review by the Investment Committee

Annually, the GFWG will review the allocation of the Green Bond/Loan proceeds to the Eligible projects and determine if any adjustment is necessary. The GFWG will ensure that all projects included under the Use of Proceeds are aligned with the Eligible Green Category or determine if replacement / deletion / additions are necessary.

C. Management of Proceeds

The net proceeds of Green Bond/Loan will be used and managed accordingly for financing and/or refinancing of existing or new Eligible Green projects. LG Chem’s Finance department will allocate the resources to teams responsible for Eligible projects. The company also plans to establish the Green Bond/Loan Register in order to manage the allocations of proceeds.

The Green Bond/Loan Register will be reviewed annually by the GFWG to account for any re-allocation, repayments or withdrawals to ensure linkage to Eligible projects and expenditures within the pool.

Pending the full allocation of the net proceeds, all or a portion of the net investment 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. The net proceeds can be swapped or hedged into different currencies subject to the company’s needs.

D. Reporting

The reporting will include allocation reporting and impact reporting and will publicly available on LG Chem's official website.

D-1. Allocation Reporting

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.

- 1) Allocation per Eligible Project Categories
- 2) Examples of projects financed by the proceeds, including their description (location, category, progress) and the corresponding allocated amount
- 3) The balance amount of unallocated net proceeds
- 4) Portion of financing and refinancing

D-2. Impact Reporting

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 Green Category	Impact Indicators
Renewable Energy	Production amount of POE
Circular Economy	Amount of bio-diesel/naphtha input, and potential CO2 reduction through raw material conversion
	Amount of bio-feedstock input, and potential CO2 reduction through raw material conversion
	Amount of plastic recycled, and CO2 reduction compared to virgin plastic
Clean Transportation	Case study of EVs using the battery supplied by LG Chem. <ul style="list-style-type: none">▪ Amount of energy saved compared to the battery supplied by Competitors (kwh)▪ Estimated annual avoided CO2 emissions (tonCO2e)

3. External Review

LG Chem has engaged DNV-GL to provide an External Review in the form of a Second Party Opinion on the Green Financing Framework, and to confirm its alignment with the ICMA's Green Bond Principles and LMA's Green Loan Principles. The Green Financing Framework and Second Party Opinion shall be publicly available on LG Chem's Official website.

The GFWG will review this Framework on a regular basis, including its alignment to updated versions of the Principles as and when they are released, with the aim of adhering to best practices in the market. Such review may result in this Framework being updated and amended. The updates, if not minor in nature, will be subject to the prior approval of the Company and DNV-GL. Any future updated version of this Framework that may exist will either keep or improve the current levels of transparency and reporting disclosures, including the corresponding review by an external reviewer. The updated Framework, if any, will be published on our website and will replace this Framework.