Second-Party Opinion

LG Chem Green Financing Framework

Evaluation Summary

Sustainalytics is of the opinion that the LG Chem Green Financing Framework is credible and impactful, and aligns with the four core components of the Green Bond Principles 2018 and Green Loan Principles 2018. This assessment is based on the following:

USE OF PROCEEDS The four eligible categories for the use of proceeds – (i) Low Carbon Transportation, (ii) Energy Efficiency, (iii) Sustainable Water and Wastewater Management and (iv) Green Buildings - are aligned with those recognized by the Green Bond Principles. Sustainalytics considers that the eligible projects will lead to positive environmental impacts by fostering development and manufacturing of low carbon transport and improved water treatment technologies. Sustainalytics considers that the eligible projects will advance the UN Sustainable Development Goals (SDGs), particularly SDG 6, 7, 9 and 11.

PROJECT EVALUATION / SELECTION LG Chem's eligible projects are evaluated and selected by its dedicated Green Financing Working Group (GFWG) based on the established eligibility criteria. The GFWG consists of cross-functional representatives from the Business and Strategy, Planning and Control, Safety and Environment teams while being coordinated by the Finance Department. This process is aligned with market practices

MANAGEMENT OF PROCEEDS The net use of proceeds will be tracked using LG Chem's Green Bond/Loan Register, which is managed by its Treasury Team. Pending full allocation, the unallocated proceeds will be invested in cash, cash equivalents, investment grade securities, other marketable securities, short-term instruments or other capital management activities according to the LG Chem's general liquidity management policies. This process is in line with market practices.

REPORTING LG Chem commits to report on the allocation and impact of proceeds on the company's website annually until full allocation of the bond. Allocation reporting will include allocation per eligible category, examples of projects financed by the proceeds, the balance amount of unallocated net proceeds, and the portion of financing and refinancing. The impact reporting will include relevant impact metrics per each eligible project category. Sustainalytics views LG Chem's allocation and impact reporting as aligned with market practices.

SECOND-PARTY OPINION

Evaluation date	25 March, 2019[1]
Issuer Location	Seoul, South Korea

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[1] This SPO is a slightly revised version of a previous SPO (dated 18 March 2019). It has been updated to incorporate new information provided by the issuer on the number of manufacturing sites, overseas subsidiaries and offices that it has. The changes are in no way material to Sustainalytics' opinion regarding the benefits of the intended use of bond proceeds or the Framework's alignment with the GBP.

Introduction

LG Chem, Ltd. ("LG Chem" or the "Company") is a chemical manufacturer company which provides a wide-range of products, particularly basic materials and chemicals, energy solution, IT and electronic materials, advanced materials, and life sciences businesses within 40 manufacturing plants, 19 overseas marketing subsidiaries, six overseas representation offices in 18 countries, , mainly in South Korea, Europe, United States and China. LG Chem was founded in 1947 and is headquartered in Seoul, South Korea.

LG Chem has developed the LG Chem Green Financing Framework (the "Framework") under which it is considering to issue green bonds and loans and use the proceeds to finance or refinance, in whole or in part, existing and future projects that contribute to the development of sustainable technologies and improve the environmental footprint of its operations while supporting the company's strategy and vision. The Framework defines eligibility criteria in the following areas:

1. Low Carbon Transportation
2. Energy Efficiency
3. Sustainable Water and Wastewater Management
4. Green Buildings

LG Chem engaged Sustainalytics to review the LG Chem Green Financing Framework, dated March 2019[2] and provide a second-party opinion on the Framework's environmental credentials and its alignment with the Green Bond Principles 2018 (GBP)[3] and the Green Loan Principles 2018 (GLP).[4] This Framework has been published in a separate document.[5]

As part of this engagement, Sustainalytics held conversations with various members of LG Chem's management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of LG Chem's green bonds and loans. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the LG Chem's Green Financing Framework and should be read in conjunction with that Framework.

[2] On 25 March 2019 LG Chem published a slightly revised version of its framework of March 2019. The revised version contains updated information on the number of manufacturing sites, overseas subsidiaries and offices that the firm has.

[3] The Green Bond Principles are administered by the International Capital Market Association and are available at https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/

[4] The Green Loan Principles are administered by the Loan Market Association and are available at https://www.lma.eu.com/application/files/9115/4452/5458/741_LM_Green_Loan_Principles_Booklet_V8.pdf

[5] The LG Chem Green Financing Framework is available on LG Chem's website at: http://www.lgchem.com/global/sustainability/sustainability-introduction/principle

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the LG Chem Green Financing Framework

Sustainalytics is of the opinion that the LG Chem Green Financing Framework is credible and impactful, and aligns with the four core components of the Green Bond Principles 2018 and Green Loan Principles 2018. Sustainalytics highlights the following elements of LG Chem's Green Finance Framework:

- Use of Proceeds:
  - The four eligible use of categories of the LG Chem Green Financing Framework are recognized as impactful by the Green Bond Principles 2018 and Green Loan Principles 2018. Sustainalytics highlights LG Chem's intention to use part of the proceeds to finance R&D in and manufacturing of electric vehicle (EV) batteries, water treatment and energy storage systems, which Sustainalytics considers important technologies to drive a low carbon economy.
  - The eligibility criteria for low carbon transportation include investments for construction of manufacturing facilities to produce batteries for electric vehicles, bicycles, and motorcycles. Sustainalytics acknowledges that the manufacturing sites may also be used for batteries for hybrids, but highlights that LG Chem commits to have the majority of batteries produced in the manufacturing sites to be for EVs, plug-in hybrids, and low emitting hybrids with emissions below 75g CO_2/km. Sustainalytics recommends LG Chem to strive to use the financed facilities for batteries for electric vehicles to the greatest extent possible.
  - In addition, Sustainalytics recognizes potential risks related to conflict minerals used in EV batteries. Sustainalytics has assessed LG Chem's preparedness and performance to mitigate risks related to the sourcing of conflict minerals (see section 2) and highlights the following measures LG Chem has taken
    - LG Chem published a supplier code of conduct in 2017, which outlines that suppliers should not "hire any person below the legal working age and complies with the legal requirements for juvenile labor regarding minimum age, working hours and working conditions;
    - LG Chem commissioned DNV GL Business Assurance Korea Co., Ltd. to carry out an audit on the respective supplier in 2018 with particular focus on identification and mitigation of child labour risk;
    - The company provides a list of its suppliers' names, providing transparency on its cobalt supply chain.

    Sustainalytics encourages the company to continually conduct and improve its supply chain due diligence.
  - LG Chem's green buildings eligibility criteria are based on third-party certification standards such as LEED Gold and G-SEED Green 2 or above. Sustainalytics has conducted an evaluation of the certifications and considers the certification standards to have a positive impact (see Appendix 1 for additional details on the certification schemes).
  - Sustainalytics highlights that the proceeds will not be directed to fossil-fuel-based production, distribution, remediation and/or associated energy efficiency technologies according to the framework's exclusionary criteria.
  - Sustainalytics views LG Chem's three-year look-back period for refinancing activities as aligned with market practices. In addition, LG Chem commits to reporting on the portion of financing vs refinancing in its annual allocation report.
- Project Evaluation and Selection:
  - LG Chem's eligible projects are evaluated and selected by its dedicated Green Financing Working Group (GFWG) based on the established eligibility criteria. The GFWG consists of cross-functional representatives from Business and Strategy, Planning and Control, Safety and Environment teams while being coordinated by the Finance Department. The GFWG intends to review the allocation of the Green Financing proceeds to the eligible categories on an annual basis. Sustainalytics views LG Chem's project evaluation and selection process as aligned with market practices.

- Management of Proceeds:
  - LG Chem tracks the use of proceeds using a Green Bond/Loan Register, which is managed by its Treasury Team. Pending full allocation, the unallocated proceeds will be invested in cash, cash equivalents, investment grade securities or other marketable securities and short-term instruments or other capital management activities according to LG Chem's general liquidity management policies. This process is in line with market practice.
- Reporting:
  - LG Chem has committed to report on the allocation and impact of proceeds on the company's website annually until full allocation of the bond. LG Chem's allocation reporting will include allocation per eligible categories, example of projects financed by the proceeds, the balance amount of unallocated net proceeds, and portion of financing and refinancing.
  - In addition to allocation reporting, the annual impact reporting will include relevant impact metrics per each project category such as the number of case studies of electric vehicles that use batteries supplied by LG Chem, CO_2 and other GHGs avoided/reduced through energy efficiency (tonnes of CO_{2eq}), amount of energy savings energy savings (kWh), volume of seawater and brackish water purified (tons), estimated annual avoided emissions of water pollutants, and certification and number of green buildings.
  - Sustainalytics considers LG Chem's allocation and impact reporting processes to be aligned with market practice

Alignment with Green Bond Principles 2018 and Green Loan Principles 2018

Sustainalytics has determined that the LG Chem's Green Financing Framework aligns to the four core components of the Green Bond Principles 2018 and Green Loan Principles 2018. For detailed information please refer to Appendix B: Green Bond/Green Bond Programme External Review Form.

Section 2: Sustainability Strategy and Performance of the Issuer

Contribution of framework to issuer's sustainability strategy and performance

LG Chem has integrated sustainability practices into its business model and implemented a governance structure supporting these commitments. LG Chem has committed to promote energy savings and increase energy efficiency while advancing the company's sustainability strategy through the following efforts:

- LG Chem's vision, *sustainability chemistry for human and environment*, is based on several principles such as providing environmentally friendly and innovative materials and solutions, and producing and operating in a sustainable way including the development of product environment control procedures as part of its safety and environmental policies.[6]
- Although LG Chem has not set quantitative reduction targets, the company has defined environmental goals, such as reducing the environmental impact of operations and strengthening product stewardship through establishing an eco-product policy.[7,8]
- LG Chem has implemented an enterprise-wide energy management policy including sub-committees that report on annual reduction targets and the company's energy management status monthly at each operational unit. In conjunction with company's energy management policy, LG Chem has set up a Corporate Energy and Climate Team responsible for the management of energy use and targets.[9]
- LG Chem provides disclosure on its progress, such as increasing its wastewater recycling rate by 12% in Korea and 28% overseas.[10]

Based on the above, Sustainalytics believes that LG Chem is well positioned to issue green bonds and loans and that the eligible projects will help the company advance its sustainability strategy.

[6] http://www.lgchem.com/global/sustainability/sustainability-introduction/principle
[7] http://www.lgchem.com/global/sustainability/sustainability-introduction/principle
[8] http://www.lgchem.com/global/sustainability/esh-management/green-products
[9] LG Chem Sustainability Report 2017
[10] LG Chem Sustainability Report 2017

Well positioned to address common environmental and social risks associated with the projects

While the eligible categories are recognized as impactful by the Green Bond and Green Loan Principles 2018, Sustainalytics also recognizes that the eligible categories might have potential social and environmental risks such as workers' health and safety and environmental impacts related to the construction of manufacturing facilities, including loss of biodiversity and land use change, as well as environmental and social risks related to the manufacturing of automotive batteries due to mining and processing of rare raw materials. Sustainalytics highlights the following measures that LG Chem has taken to mitigate related risks:

- In conjunction with the company's Safety, Health and Environmental Management System (SH&E), LG Chem's sites are aligned with ISO 14001, OHSAS 18001 and KOSHA 18001 standards.
- LG Chem's company-wide risk management system covers social and environmental risks, amongst others. LG Chem identified possible related risks and established mitigation actions such as strengthening the water resource inventory management system in domestic and overseas sites, regular and special inspections of safety and environment in all plants at home and abroad. To ensure the robustness of its risk management system, LG Chem executes a working-level risk analysis session on a weekly basis.[11]

Sustainalytics recognizes that LG Chem faced allegations by Amnesty International that it violated its supply chain due diligence, in its cobalt supply chain. In January 2016, Amnesty International reported that LG Chem, along with several automakers, battery manufacturers and electronics companies, sourced from 3rd tier suppliers that used child labour, namely Congo Dongfan Mining International (CDM). Since then, LG Chem has published a supplier code of conduct in 2017, which outlines that suppliers should not "hire any person below the legal working age and that suppliers comply with the legal requirements for juvenile labor regarding minimum age, working hours and working conditions". The company commissioned DNV GL Business Assurance Korea Co., Ltd. to carry out an audit on CDM in 2018 with a particular focus on identification and mitigation of child labour risk. In addition, the company jointly participates in a pilot using blockchain to track cobalt supply[12] and provided a list of its suppliers' names on its cobalt supply chain.[13] While Sustainalytics acknowledges LG Chem's efforts to mitigate risk related to cobalt, Sustainalytics recommends that the company continuously conducts its supply chain due diligence processes.

Section 3: Impact of Use of Proceeds

All four use of proceeds categories are recognized as impactful by the Green Bond Principles 2018 and Green Loan Principles 2018. Sustainalytics has focused below two where the impact is specifically relevant for LG Chem.

Importance of investing in automotive batteries for low carbon electric vehicles

According to the International Energy Agency, the transport sector contributes 23% of global energy-related CO_2 emissions.[14] Moreover, CO_2 emissions from transport is expected to increase by 60% in 2050.[15] Given the necessity of decarbonizing transportation to meet global climate targets, EVs play an important role due to – (i) higher energy efficiency, (ii) GHG emission reduction, (iii) air quality improvements, and (iv) reduction of noise- compared to conventional combustion engines.[16] Despite these benefits, electric vehicles are dependent on the electricity sources in the energy mix of the dedicated country where they will be recharged. In countries with a carbon intensive energy mix, this dependency can reduce the benefits of EVs. Nevertheless, according to the European Environmental Agency, as the carbon intensity of the energy mix is projected to decrease, the life-cycle emissions of electric vehicles could be cut by at least 73 % by 2050.[17]

[11] LG Chem Sustainability Report 2017
[12] Energy Storage News, LG Chem, Ford sign up to blockchain pilot assessing cobalt supply chains, January 2019: https://www.energy-storage.news/news/lg-chem-ford-sign-up-to-blockchain-pilot-assessing-cobalt-supply-chains
[13] http://www.lgchem.com/global/sustainability/sustainability-introduction/principle
[14] https://www.iea.org/etp/tracking2017/transport/
[15] https://www.itf-oecd.org/sites/default/files/docs/transport-co2-paris-climate-agreement-ndcs.pdf
[16] https://www.eecabusiness.govt.nz/technologies/electric-vehicles/benefits-and-considerations/
[17] https://www.eea.europa.eu/publications/electric-vehicles-from-life-cycle

LG Chem intends to use part of the proceeds to finance manufacturing facilities and R&D for EV and low emitting hybrids (with emissions below 75g CO_2/km) batteries. Since batteries are the key component of the low-carbon vehicles, technological development of batteries that aim to reduced battery costs, weight and charging time, increased capacity, range and storage capabilities become crucial to achieve a low-emission economy. [18] Due to the clear environmental benefits, changing demand of customers, increasing environmental responsibility and government subsidies, the popularity of EVs has been growing rapidly.[19] In 2017, France announced that they committed to ban the sale of petrol and diesel cars by 2040, followed by the United Kingdom (2040), India (2030) and Norway (2025). Pure electric vehicles currently make up 66% of the global EV market with growth numbers higher than for plug-in hybrid vehicles.[20] According to the International Energy Agency, electric vehicles will grow from 3 million to 125 million by 2030,[21] indicating the need for more supply of EVs and thus also EV batteries.

Given the importance of the transport sector in regard to GHG emissions, Sustainalytics is of the opinion that LG Chem's investments in R&D and manufacturing of EV batteries can contribute to the reduction of GHG emissions from the sector and thus contribute to a low carbon economy.

Importance of energy storage systems for energy efficiency

Energy Storage Systems (ESS) allow for the storage of electricity and the utilization of this electricity for later consumption, which is of particular importance for renewable energy sources as supply is variable due to its dependence on e.g. sunshine for solar. Thus, ESS plays a significant role in the integration of renewable technologies in energy systems ensuring that supply can be matched with demand.[22] According to the Energy Storage Council (ESC), energy storage is an inherent part of the electricity value chain and a critical element of electricity supply.[23]

LG Chem intends to use part of the proceeds to invest in the construction of manufacturing facilities and R&D for ESS design. While helping the integration of renewable energy, current R&D efforts for ESS systems focus on storing energy generation in shorter time frames, allowing for more flexible timing in the use of energy.[24] Moreover, emerging ESS technology allows for the quicker discharge of power to the grid which is important for ensuring the stability when unexpected increases in demand occur.[25]

Given the importance of energy storage systems to increase the effective use of energy and the increased use of renewable energy, Sustainalytics believes that investing in ESS technologies can contribute to a reduction in the dependency on fossil fuels.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This green bond advances the following SDG goals and targets:

Use of Proceeds Category	SDG	SDG target
Low Carbon Transportation	11. Sustainable Cities and Communities	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

[18] https://ec.europa.eu/transport/sites/transport/files/themes/strategies/news/doc/2016-07-20-decarbonisation/2016-07-20-strategic-note-issue18-low-emission-mobility.pdf
[19] https://www.jpmorgan.com/global/research/electric-vehicles
[20] https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/the-global-electric-vehicle-market-is-amped-up-and-on-the-rise
[21] https://www.iea.org/newsroom/news/2018/may/strong-policy-and-falling-battery-costs-drive-another-record-year-for-electric-ca.html
[22] https://www.studentenergy.org/topics/energy-storage
[23] https://www.energystoragecouncil.org/
[24] https://www.ucsusa.org/clean-energy/how-energy-storage-works#references
[25] https://www.ucsusa.org/clean-energy/how-energy-storage-works#references

Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
Sustainable Water and Wastewater Management	6. Clean Water and Sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
Green Buildings	9. Industry, innovation and infrastructure	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

Conclusion

LG Chem has developed the LG Chem Green Financing Framework (the "Framework") under which it is considering to issue green bonds and green loans and use the proceeds to finance or refinance existing and/or future projects related to (i) Low Carbon Transportation, (ii) Energy Efficiency, (iii) Sustainable Water and Wastewater Management (iv) Green Buildings. Sustainalytics considers that the use of proceeds contribute to foster development and manufacturing of low carbon transport and improve water treatment technologies. Sustainalytics has assessed the framework and concluded that it aligns with the Green Bond Principles 2018 and Green Loan Principles 2018.
Sustainalytics highlights that LG Chem will use part of the proceeds for research and development in electric vehicles battery technologies, which are of high importance to foster low carbon transportation.

LG Chem's processes for project selection and evaluation, management of proceeds and reporting are in alignment with market practice. In addition, the company uses recognized third party standards for its green buildings as well as an exclusionary criterion regarding fossil-based production, distribution, remediation and associated energy efficiency technologies.

Based on the above, Sustainalytics considers the LG Chem Green Financing Framework to be credible, robust and transparent.

Appendices

Appendix 1: Comparison of Green Buildings Standards and Certifications

	LEED	G-SEED
Background	Leadership in Energy and Environmental Design (LEED) is a US Certification System for residential and commercial buildings used worldwide. LEED was developed by the non-profit U.S. Green Building Council (USGBC) and covers the design, construction, maintenance and operation of buildings.	G-SEED (Green Standard for Energy and Environmental Design) is a green building certification standard used in Korea. First implemented in 2002, and later expanded in 2016, G-SEED is administered by the Korean Government under the authority of the Green Building Act (2006).
Certification levels	Certified Silver Gold Platinum	Green 4 Green 3 Green 2 Green 1
Areas of Assessment	Energy and atmosphere Sustainable Sites Location and Transportation Materials and resources Water efficiency Indoor environmental quality Innovation in Design Regional Priority	Land Use & Transportation Energy & Environmental Pollution Materials & Resources Water Management Maintenance Ecology Indoor Environment Innovative Design
Requirements	Prerequisites (independent of level of certification) + Credits with associated points These points are then added together to obtain the LEED level of certification There are several different rating systems within LEED. Each rating system is designed to apply to a specific sector or construction type.	Prerequisites (independent of level of certification) + Credits with associated points Individual credits are achieved in a number of areas; category scores are then weighted to achieve an overall grade. Different ratings systems exist with G-SEED for new buildings, existing buildings, and green-remodelling buildings.
Performance display		
Accreditation	LEED AP BD+C LEED AP O+M	Certification Bodies, appointed by the Ministry of Environment (MOE) and the Ministry of Land, Infrastructure and Transportation (MLIT) review and certifies projects.
Qualitative considerations	Widely recognised internationally, and strong assurance of overall quality.	Widely used in Korea, and aligned with government standards. Strong overall qualifications. Little international recognition.

Appendix 2: Green Bond / Green Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	LG Chemicals
Green Bond ISIN or Issuer Green Bond Framework Name, if applicable: ***[specify as appropriate]***	LG Chem Green Financing Framework
Review provider's name:	Sustainalytics
Completion date of this form:	12 March 2019
Publication date of review publication: ***[where appropriate, specify if it is an update and add reference to earlier relevant review]***	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBPs:

☒	Use of Proceeds	☒	Process for Project Evaluation and Selection
☒	Management of Proceeds	☒	Reporting

ROLE(S) OF REVIEW PROVIDER

☒	Consultancy (incl. 2nd opinion)	☐	Certification
☐	Verification	☐	Rating
☐	Other *(please specify)*:		

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW ***(if applicable)***

Please refer to Evaluation Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section *(if applicable)*:

The four eligible use of categories of the LG Chem Green Financing Framework are recognized as impactful by the Green Bond Principles 2018 and Green Loan Principles 2018. Sustainalytics highlights, LG Chem intention to use part of the proceeds to finance R&D in and manufacture of EV batteries, water treatment and energy storage systems, which Sustainalytics considers important technologies to drive a low carbon economy.
The eligibility criteria for low carbon transportation include investments for construction of manufacturing facilities to produce batteries for electric vehicles, bicycles, and motorcycles. Sustainalytics acknowledges that the manufacturing sites may also be used for batteries for hybrids, but highlights that LG Chem commits to have the majority of batteries produced in the manufacturing sites to be for electric vehicles, plug-in hybrids, and low emitting hybrids with emissions below 75g CO_2/km. Sustainalytics recommends LG Chem to strive to use the financed facilities for batteries for electric vehicles to the greatest extent possible.
LG Chem's green buildings eligibility criteria are based on third-party certification standards such as LEED Gold and G-SEED Green 2 or above. Sustainalytics has conducted an evaluation of the certifications and considers the certification standards to have a positive impact.

Use of proceeds categories as per GBP:

☐	Renewable energy	☒	Energy efficiency
☐	Pollution prevention and control	☐	Environmentally sustainable management of living natural resources and land use
☐	Terrestrial and aquatic biodiversity conservation	☒	Clean transportation
☒	Sustainable water and wastewater management	☐	Climate change adaptation
☐	Eco-efficient and/or circular economy adapted products, production technologies and processes	☒	Green buildings
☐	Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs	☐	Other *(please specify)*:

If applicable please specify the environmental taxonomy, if other than GBPs:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

LG Chem's eligible projects are evaluated and selected by its dedicated Green Financing Working Group (GFWG) based on the established eligibility criteria. The GFWG consists of cross-functional representatives from Business and Strategy, Planning and Control, Safety and Environment teams while being coordinated by Finance Department. GFWG intends to review the allocation of the Green Financing proceeds to the eligible categories on an annual basis. Sustainalytics views LG Chem's project evaluation and selection process as aligned with market practices.

Evaluation and selection

- ☒ Credentials on the issuer's environmental sustainability objectives
- ☒ Defined and transparent criteria for projects eligible for Green Bond proceeds
- ☐ Summary criteria for project evaluation and selection publicly available
- ☒ Documented process to determine that projects fit within defined categories
- ☐ Documented process to identify and manage potential ESG risks associated with the project
- ☐ Other *(please specify):*

Information on Responsibilities and Accountability

- ☒ Evaluation / Selection criteria subject to external advice or verification
- ☐ In-house assessment
- ☐ Other (please specify):

3. MANAGEMENT OF PROCEEDS

Overall comment on section *(if applicable)*:

LG Chem tracks the use of proceeds using a Green Bond/Loan Register, which is managed by its treasury team. Pending full allocation, the unallocated proceeds will be invested in cash, cash equivalents, investment grade securities or other marketable securities and short-term instruments or other capital management activities according to LG Chem's general liquidity management policies. This process is in line with market practices.

Tracking of proceeds:

- ☒ Green Bond proceeds segregated or tracked by the issuer in an appropriate manner
- ☒ Disclosure of intended types of temporary investment instruments for unallocated proceeds
- ☐ Other *(please specify)*:

Additional disclosure:

- ☐ Allocations to future investments only
- ☒ Allocations to both existing and future investments

☐ Allocation to individual disbursements
☐ Allocation to a portfolio of disbursements
☐ Disclosure of portfolio balance of unallocated proceeds
☐ Other *(please specify)*:

4. REPORTING

Overall comment on section (if applicable):

LG Chem has committed to report on the allocation and impact of proceeds on the company's website annually until full allocation of proceeds. LG Chem's allocation reporting will include allocation per eligible categories, example of projects financed by the proceeds, the balance amount of unallocated net proceeds, and portion of financing and refinancing.
In addition to allocation reporting, the annual impact reporting will include relevant impact metrics per each project category such as number of case study of electric vehicles that use batteries supplied by LG Chem, CO2 and other GHGs avoided/reduced through energy efficiency (tonnes of CO_{2eq}),amount of energy savings energy savings (kWh), volume of seawater and brackish water purified (tons), estimated annual avoided emissions of water pollutants, and certification and number of green buildings.
Sustainalytics considers LG Chem's allocation and impact reporting processes are aligned with market practices

Use of proceeds reporting:

☐ Project-by-project
☒ On a project portfolio basis
☐ Linkage to individual bond(s)
☐ Other *(please specify):*

Information reported:

☒ Allocated amounts
☐ Green Bond financed share of total investment
☐ Other *(please specify):*

Frequency:

☒ Annual
☐ Semi-annual
☐ Other (please specify):

Impact reporting:

☐ Project-by-project
☒ On a project portfolio basis
☐ Linkage to individual bond(s)
☐ Other (please specify):

Frequency:

☒ Annual
☐ Semi-annual
☐ Other (please specify):

Information reported (expected or ex-post):

☒ GHG Emissions / Savings
☒ Energy Savings
☐ Decrease in water use
☐ Other ESG indicators (please specify): Case study of electric vehicles that use batteries supplied by LG Chem, volume of seawater and brackish water purified (in tons), estimated annual avoided emissions of water pollutants, type of certification and number of Green Buildings

Means of Disclosure

☐ Information published in financial report
☐ Information published in sustainability report
☐ Information published in ad hoc documents
☒ Other (please specify): Corporate Website
☐ Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

Corporate website: http://www.lgchem.com/global/main

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

☐ Consultancy (incl. 2nd opinion)
☐ Certification
☐ Verification / Audit
☐ Rating
☐ Other *(please specify):*

Review provider(s): **Date of publication:**

ABOUT ROLE(S) OF INDEPENDENT REVIEW PROVIDERS AS DEFINED BY THE GBP

i. Second Party Opinion: An institution with environmental expertise, that is independent from the issuer may issue a Second Party Opinion. The institution should be independent from the issuer's adviser for its Green Bond framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second Party Opinion. It normally entails an assessment of the alignment with the Green Bond Principles. In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.

ii. Verification: An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP, may also be termed verification.

iii. Certification: An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.

iv. Green Bond Scoring/Rating: An issuer can have its Green Bond, associated Green Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the GBP, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.

Disclaimer

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Sustainalytics is a leading independent ESG and corporate governance research, ratings and analytics firm that support investors around the world with the development and implementation of responsible investment strategies. With 13 offices globally, the firm partners with institutional investors who integrate ESG information and assessments into their investment processes. Spanning 30 countries, the world's leading issuers, from multinational corporations to financial institutions to governments, turn to Sustainalytics for second-party opinions on green and sustainable bond frameworks. Sustainalytics has been certified by the Climate Bonds Standard Board as a verifier organization, and supports various stakeholders in the development and verification of their frameworks. Global Capital named Sustainalytics the "Most Impressive Second Party Opinion Provider in 2017. In 2018, the firm was recognized as the "Largest External Reviewer" by the Climate Bonds Initiative as well as Environmental Finance. In addition, Sustainalytics received a Special Mention Sustainable Finance Award in 2018 from The Research Institute for Environmental Finance Japan for its contribution to the growth of the Japanese Green Bond Market.

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