



GREEN FINANCING FRAMEWORK

SK hynix

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1. Background

1.1. Introduction

Established in 1983, SK hynix is a multinational company with over three decades of expertise in semiconductor manufacturing. The company's global presence spans from four production sites in Korea and China (Icheon, Cheongju, Wuxi, and Chongqing) to four R&D centers and ten sales offices across the world. SK hynix is positioned as the third largest semiconductor company globally, following Samsung and Intel in terms of revenue as of 2019FY (USD22.3bn) (*Source: Gartner*).

Building on its existing technological prowess, SK hynix makes relentless R&D efforts and investments to develop cutting-edge technology and cost-competitive products to attain leadership in the global semiconductor market.

1.2. Business Areas

DRAM (Dynamic Random Access Memory)

The company's major products include PC DRAM for PCs and laptops, server DRAM for servers in data centers, mobile DRAM for portable devices like smartphones for which low power consumption is key, graphic DRAM for processing massive graphic data at a high speed, and consumer DRAM for various digital devices. Such wide-ranging products are optimized to support diverse interfaces that customers require.

NAND Flash

NAND flash was first used for data storage in MP3 players, PMPs, digital cameras, and navigation systems, but its applications are now diversifying into smartphones, tablets, PCs, and SSDs (Solid State Drives). With its industry-leading technology and market share, SK hynix has been keeping pace with market changes by continuously developing new products that offer higher data processing speeds and larger storage capacities.

In addition to its extensive NAND flash portfolio consisting of the latest raw NAND in various densities, including the MLC (Multi Level Cell) and TLC (Triple Level Cell), SK hynix continues to offer the highest-quality NAND solutions such as MCP (Multi Chip Package), embedded NAND flash, and SSDs to fulfil customers' various needs.

CIS (CMOS Image Sensor)

CIS products are non-memory semiconductors that serve the role of digital film in many IT devices. Despite being non-memory, the manufacturing processes of CIS products are closely related to those of memory semiconductors. Leveraging on the technological prowess cumulated by producing various memory semiconductors, SK hynix has made a successful entry into the CIS business. The use of CIS is projected to increase continuously, as more image data will be utilized in the future.

The CIS products of SK hynix are used in wide-ranging areas including not only cell phone and smartphone cameras, but also miniature medical imaging systems. Going forward, SK hynix will strive to open a new horizon in the CIS business by securing new high-pixel scaling technologies and offering products that can fulfil a variety of customers' requirements.

1.3. Commitment to Sustainability

SK hynix pursues Double Bottom Line (DBL), which is a value system that takes economic value (EV) and social value (SV) into consideration in the business environment. Social value represents the total value of corporate management activity which contributes to solutions with regard to ‘social problems’ and the enhancement of ‘happiness’ of stakeholders.

We are confident about the fact that the management philosophy behind DBL is significant for innovation and growth. We will pursue growth that combines social and economic values while striving to become a company that grows together with society to keep up with such changes. Below are some of the relevant activities that SK hynix engages in.

UN SDGs	Key Activities of SK hynix
3 (Good Health and Well-being)	<ul style="list-style-type: none"> ▪ Operate worksite safety management programs ▪ Establish a preemptive management system – Cohort ▪ Manage air pollutants at levels below legally-required levels ▪ Social contribution activities in health care, public health and safety – Happy Plus Nutritious Meal, 100-Year Longevity of Veterans, Happy Bus, Memory Guarding Angel (Happiness GPS)
4 (Quality Education)	<ul style="list-style-type: none"> ▪ Social contribution activities in education – Do Dream scholarship, Hyinsten
7 (Affordable and Clean Energy)	<ul style="list-style-type: none"> ▪ Energy TF activities, including replacement into highly efficient facilities ▪ Development of low power-consuming, high-performance, eco-friendly products
8 (Decent Work and Economic Growth)	<ul style="list-style-type: none"> ▪ Establishment of the HAPPY-MORE INC. ▪ System to guarantee work-life balance ▪ 52-hour-a-week labor time management
10 (Reduced Inequalities)	<ul style="list-style-type: none"> ▪ Compliance with the policy of respecting diversity and prohibiting discrimination ▪ Programs to support win-win growth ▪ Operate a sharing infrastructure portal ▪ Social contribution activities to help low-income families create income – Silver Angel for Happiness School Uniform
12 (Responsible Consumption and Production)	<ul style="list-style-type: none"> ▪ Activities to reduce chemicals ▪ TF activities to reduce water consumption and wastewater discharge ▪ Recovery of waste ▪ Comply with regulations to limit the use of harmful materials for products
13 (Climate Action)	<ul style="list-style-type: none"> ▪ Set an annual goal to reduce GHG emissions ▪ TF activities to reduce GHG emissions
16 (Peace, Justice and Strong Institutions)	<ul style="list-style-type: none"> ▪ Strengthen independence and diversity of the BOD ▪ Comply with code of ethics

1.4. SK hynix’s Strategies for a Sustainable Management

SK hynix pursues the creation of social values that contributes to society and facilitates the resolution of social/environmental problems, along with economic growth. In particular, through environmental protection, responsible supply chain management, social contribution, and corporate culture that guarantees diversity and inclusion, we will fulfill a management of coexistence in which the company and society grow together.

Environmental Protection	Responsible Supply Chain Management
<p style="text-align: center;">2022 ECO¹⁾ Vision</p> <p>Pursuing tasks to reduce environmental impact</p>	<p style="text-align: center;">ESG Consulting & Youth Hy-Five</p> <p>Supporting the mutual growth program for enhancing the sustainability of suppliers and securing talent</p>
<p style="text-align: center;">ECO Alliance</p> <p>An eco-friendly semiconductor ecosystem based on cooperation between SK hynix and its suppliers</p>	<p style="text-align: center;">Working Environment Health Center</p> <p>Health support and counselling for suppliers and vulnerable members of the community</p>
Glocal ²⁾ Contribution	Diversity and Inclusion Culture
<p style="text-align: center;">Social problem resolution and happiness sharing</p> <p>Providing ICT solutions on social problems and talent donation by employees</p>	<p style="text-align: center;">Diversity & Inclusion Center</p> <p>Establishing a creative and healthy organizational culture in which our employees’ diversity is recognized and they are able to freely demonstrate their abilities</p>
<p style="text-align: center;">Local community-based contribution</p> <p>Specialized social contribution to solve problems in global campuses</p>	

1. ECO: Environmental & Clean Operation
 2. Glocal: Global + Localization

SK hynix has established and taken into action the following goals as part of 2022 ECO Vision in order to reduce greenhouse gas emission, expand recycling of water, waste, and establish clean campuses.

1. **Reduction of Water Usage**
 - Annual water recycling of 20,000,000 tons achieved
 - Expansion of water recycling and advancement of waste water processing technology
2. **Expansion of Waste Recycling**
 - 98% waste recycling rate achieved
3. **Expansion of Usage of Renewable Energy**
 - 100% usage rate of renewable energy in overseas sites
 - Promotion of renewable energy production/application in domestic sites
4. **Reduction of Greenhouse Gas Emission**
 - 40% reduction of greenhouse gas emission (compared to BAU (Business as usual) in '16)
 - Support to greenhouse gas reduction projects in developing countries (300,000 tCO₂) (Myanmar cook-stove supply project)
5. **Establishment of Clean Campus**
 - Establishment of ‘Household disposables-free’ site

In addition, as part of the SK Group’s strategies to promote environmental, social, and governance (ESG) goals, SK hynix, along with 7 other SK Group affiliates (SK Telecom, SK Corp., SKC, SK Siltron, SK Materials, SK Broadband, SK IE Technology), has become the first Korean business to plan to join the Renewable Energy (RE) 100 global initiative.

RE100 initiative was launched by the Climate Group in 2014 to accelerate changes towards zero carbon grids, and it has over 280 member companies including Google, Apple, and General Motors. Under the initiative, SK hynix plans to meet 100 percent of the electricity demand with power generated from renewable energy sources by 2050.

2. SK hynix Green Financing Framework

The SK hynix Green Financing Framework (“Framework”) sets out the criteria, governance and processes under which the Company, intends to issue green bonds, loans, private placements or any other financing instruments (together “Green Financing Instruments”).

This Framework is in line with:

- International Capital Market Association (“ICMA”) Green Bond Principles 2018¹ (“GBP”);
- Loan Market Association (“LMA”), Loan Syndications and Trading Association (“LSTA”) and Asia Pacific Loan Market Association (“APLMA”) Green Loan Principles 2020² (“GLP”)

This Framework has five key pillars:

1. Use of Proceeds
2. Process for Project Evaluation and Selection
3. Management of Proceeds
4. Reporting
5. External Review

2.1 Use of Proceeds




Any Green Financing Instruments issued by SK hynix will be used to finance and/or re-finance, in whole or in part, new or existing projects, under construction and / or in operation (“Eligible Projects”) from any of the Eligible Green Categories as defined below.

For the avoidance of doubt, for new projects or assets, the proceeds can finance assets during the construction and/or operational phase.

For re-financing of Eligible Projects, SK hynix will limit the ‘look back’ period to 36 months from the date of the Green Financing Instrument transaction.




For any Green Financing Instrument issued, SK hynix will commit to allocate proceeds to Eligible Projects within 36 months, on a best efforts basis, of Green Financing Instrument closure.

Eligible Green Categories

Eligible Green Categories	Green Criteria / project examples	SDG supported
Sustainable water and wastewater management	<p>Investment into construction / installation, operation and/or maintenance of projects / assets that materially reduce the amount of water consumed or wasted, allow for greater water volumes to be efficiency treated, including but not limited to:</p> <ul style="list-style-type: none"> ▪ Regional Waterworks ▪ Wastewater treatment facilities /plant ▪ Wastewater reduction trickling filter ▪ Cooling tower drain water recycling system 	 
Energy Efficiency	<p>Investment into research / development, construction / installation, operation and/or maintenance of projects / assets that materially reduce the amount of energy consumed, improve energy efficiency, including but not limited to:</p> <ul style="list-style-type: none"> ▪ LED lighting for office and machine rooms to reduce energy consumption ▪ Low-power solid-state drives (SSDs) to improve energy performance and reduce energy consumption 	

¹ <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>

² <https://www.aplma.com/en/gsl>

	<ul style="list-style-type: none"> Investment into booster pump in cooling tower pipes and heat exchange system within cooling towers to increase heat taken from cooling process to use for maintaining level of temperature and humidity of clean room and office buildings 	
Pollution prevention and control	<p>Investment into construction / installation, operation and/or maintenance of projects / assets that materially reduce the emissions/ waste created from operations, including but not limited to:</p> <ul style="list-style-type: none"> Establishment of Environmental Analysis Center and investment into environment analysis system Installation of automatic water quality measurement equipment Procurement and installation of automatic water quality measurement equipment and measuring equipment Tele Monitoring System (TMS) Establishment of nitrogen oxide (NOx) reduction infrastructure 	
Terrestrial and aquatic biodiversity conservation	<p>Investment into construction / installation, operation and/or maintenance of projects / assets that materially enhance the wellbeing of local terrestrial and aquatic biodiversity, and aid in their long term conservation, including but not limited to:</p> <ul style="list-style-type: none"> Construction and ongoing maintenance of ecological park and wetland that are created and managed in accordance with the: <ul style="list-style-type: none"> - Building Act - Act on urban parks and green areas 	 

Exclusion Criteria

Projects that do not fall into the Eligible Green Categories as listed above will not be eligible under this Framework. Explicitly, the type of projects related to the generation or transmission of energy from fossil fuel and sectors listed in the IFC Exclusion List (2007)³ shall be excluded from this Framework.

2.2 Process for Project Selection and Evaluation

SK hynix has established an internal ESG Working Group with regards to green financing, which is composed of Finance Management organization, ESG-related departments, and environment-related departments. The working group evaluates and selects potential Eligible Projects.

Looking at the process in more detail, any department related to ESG activities can propose a green investment project. Once a proposal has been made, then the infrastructure team, responsible for project construction, calculates budget and plans construction method and associated timeline.

Projects that have this level of analysis and fit the green criteria in the Eligible Green Categories as described above, are then known as the preliminarily potential Eligible Projects

Finally, the existing ESG Management Committee, which includes the CEO, then reviews the preliminarily selected potential Eligible Projects for final approval.

The key roles include the below:

³ https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/ifcexclusionlist

- Review, select and validate the pool of Eligible Projects based on the Framework on an annual basis;
- During annual review of outstanding Green Financing Instruments and Eligible Projects, exclude projects that no longer comply with the Eligibility Criteria or have been disposed of, and replace them, on a best effort basis, with new Eligible Projects;
- During the life of any Green Financing Instrument, should any validated Eligible Projects mature, these will be replaced with an equivalent value of new Eligible Projects within 36 months on a best effort basis;
- Eligible Projects will be monitored for controversies, and any being found will be reviewed again to determine if the Eligible Project should be removed from the bond it is allocated towards;
- Monitor on-going evolution related to the sustainable financing market practices in terms of disclosure / reporting in order to be in-line with best market practices; and
- Create and validate the annual reporting on Green Financing Instruments issued under this Framework for investors and lenders, this reporting process will be disclosed in the impact reporting, which will be made publicly available on the company website.

ESG Working Group will gather at least every 12 months, and discussion and decisions on the selection of Eligible Green projects will be recorded to keep a paper trail.

2.3 Management of Proceeds

SK hynix intends to allocate the proceeds to fund Eligible Projects under the Eligible Green Categories, selected in accordance with the use of proceeds criteria and evaluation and selection process presented above. These projects may consist of new and / or existing projects.

SK hynix will initially deposit the proceeds from any Green Financing Instrument into the general funding accounts of SK hynix.

A Green Financing Register will be established to earmark the proceeds of the Green Financing Instruments against assessed and selected Eligible Projects following the process described in section 2.2 above.

SK hynix will strive to maintain a level of allocation which, after adjustments for intervening circumstances including, but not limited to, divestments, matches or exceeds the balance of net proceeds from its outstanding Green Financing Instruments. Additional Eligible Projects will be added to the Green Financing Register to the extent required to ensure that an amount equal to the net proceeds from outstanding Green Financing Instruments will be allocated to Eligible Projects until the maturity of the instruments.

Pending the full allocation of the proceeds, the balance of unallocated proceeds shall be invested at SK hynix's discretion, in cash and/or cash equivalent and/or other liquid marketable instruments, as per SK hynix's treasury policy and the Exclusion Criteria.

2.4 Reporting

SK hynix commits to transparent reporting on its Green Financing Instruments.

A Green Financing Report will be made available to investors and lenders within one year from the date of the issuance of the Green Financing Instruments and thereafter once a year until the proceeds have been fully allocated. The respective Green Financing Report will consist of both i) allocation reporting and ii) impact reporting.

Green Financing Reports will be available on SK hynix’s website.

Once fully allocated, in case of material changes to the allocation of any Green Financing Instrument, SK hynix will provide the updated information to the investors and lenders on a timely manner.

2.4.1 Allocation reporting

To the extent practicable, this will detail:

- The amounts allocated in the respective Eligible Green Categories
- A qualitative description of key Eligible Projects funded by the Green Financing Instrument proceeds
- The proportion of new financing versus re-financing
- Project expected construction completion date, subject to confidentiality disclosure
- The proportion of co-financing and types of temporary unallocated funds placements on a best effort basis, subject to confidentiality disclosure
- The balance of unallocated proceeds

2.4.2 Impact reporting

Where practical and feasible, SK hynix will provide impact reporting for each Eligible Green Category where competition and confidentiality considerations permit. It may contain the following impact metrics for each Eligible Green Category:

Eligible Green Categories	Indicative Reporting Indicators
Sustainable water and wastewater management	<ul style="list-style-type: none"> ▪ Number of regional waterworks/ Wastewater treatment facilities /plant built ▪ Annual volume (m3) of waste water treated ▪ Water grade quality of waste water treated and released (m3) ▪ Annual volume (m3) of water recycled (metric for cooling tower drain water recycling system)
Energy Efficiency	<ul style="list-style-type: none"> ▪ Annual GHG emissions reduced/avoided in tons of CO2 equivalent ▪ Annual energy savings achieved in MWh/GWh/GJ/TJ ▪ Energy consumption per Gb of product produced for low-power SSD products and equivalent investments ▪ Amount of steam usage reduced (metric for waste heat recovery)
Pollution prevention and control	<ul style="list-style-type: none"> ▪ Number of environment analysis system / water quality measurement system installed ▪ Annual emissions reduced/avoided in tons of NOx equivalent ▪ Water quality metrics (Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD) (metric for automatic water quality measurement equipment)
Terrestrial and aquatic biodiversity conservation	<ul style="list-style-type: none"> ▪ Location of ecological park and wetland to the extent once it becomes a public information ▪ Area (m3) of ecological park and wetland created ▪ Prior to completion report on the probability of inhabitation ▪ Prior to completion report on the number of species (plant and animal) living in ecological park and wetland

All assumptions and methodologies used to calculate impact amounts will be disclosed in the annual reporting at the relevant section.

2.5 External Review

2.5.1 Second Party Opinion

SK hynix's Green Financing Framework has been reviewed by Vigeo Eiris who has issued a Second Party Opinion to confirm the alignment with ICMA Green Bond Principles 2018, and LMA/LSTA/APLMA Green Loan Principles 2020.

This Second Party Opinion document will be made publicly available on SK hynix's website.