

Second-Party Opinion

NongHyup Bank Green, Social, and Sustainability Bonds

Evaluation Summary

Sustainalytics is of the opinion that the NongHyup Bank Green, Social, and Sustainability Bonds ("GSS Bonds") Framework is credible and impactful, and aligns with the Sustainability Bond Guidelines 2018. This assessment is based on the following:



USE OF PROCEEDS The eight green categories and the six social categories for eligible use of proceeds are aligned with those recognized by the Green Bond Principles, the Social Bond Principles, and the Sustainability Bond Guidelines 2018. Although the financing is not exclusively project-based, Sustainalytics considers the eligible green and social projects to have positive environmental and social impacts and to advance many of the UN Sustainable Development Goals.



PROJECT EVALUATION / SELECTION A dedicated Sustainability Bond Working Group (SBWG) will oversee NH Bank's internal process in evaluating and selecting projects. The SBWG will consist of members from various departments, including the Treasury Department, and the Agriculture & Food Finance Department. This is in line with market practice.



MANAGEMENT OF PROCEEDS NH Bank will track the net use of proceeds through a GSS Bond Register. The proceeds of the transaction will be deposited in the general funding accounts and earmarked for allocation to eligible assets. NH Bank has procedures to allocate proceeds to outstanding indebtedness, and/or to temporarily invest in cash, cash equivalents, investment grade securities or other marketable securities and short-term instruments or other capital management activities. This is in line with market practice.



REPORTING NH Bank intends to publish information on its website within one year of issuance, and on an annual basis. Allocation reporting will include the total amount allocated to eligible projects as well as the balance of unallocated proceeds and, where possible, impact reporting will include relevant social and environmental metrics. Sustainalytics views NH Bank's allocation and impact reporting as aligned with market practice.

Evaluation date	December 14 2018
Issuer Location	Seoul, Korea

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Introduction

NongHyup Bank ("NH Bank", or the "Issuer") was founded in 2012 as a wholly owned subsidiary of NongHyup Financial Group ("NHFG", or "the Group"), which in turn is wholly owned by National Agricultural Cooperative Federation ("NACF") in South Korea. NACF was established as an umbrella organization for agricultural cooperatives under the National Agricultural Cooperatives Federation Act (the "NACF Act") passed in 1961 to provide financial support for the development of the agricultural industry in Korea. NH Bank offers agricultural policy loans, as its main policy role, to farmers and agri-food companies usually at concessionary interest rates set below market level with the government support. NH Bank's financial services include personal financing, corporate financing, card service, foreign exchange service, and other financial services.

NH Bank has developed the Green, Social, and Sustainability Bond Framework (the "Framework") under which it is issuing green bonds, social bonds, and/or sustainability bonds ("GSS Bonds") and use the proceeds to refinance or finance, in whole or in part, existing or new eligible projects that provide clear environmental and social benefits.

The Framework defines Green Eligible Categories in the following eight areas:

1. Sustainable Agriculture
2. Renewable Energy
3. Energy Efficiency
4. Pollution Prevention and Control
5. Clean Transportation
6. Sustainable Water and Wastewater Management
7. Climate Change Adaptation
8. Green Buildings

The Framework defines Social Eligible Categories in the following six areas:

1. Sustainable Agriculture
2. Employment Generation
3. SME Financing and Microfinance
4. Access to Essential Services
5. Affordable Basic Infrastructure
6. Affordable Housing

NH Bank engaged Sustainalytics to review the Green, Social, and Sustainability Bond Framework and provide a second-party opinion on the Framework's environmental and social credentials as well as its alignment with the Green Bond Principles ("GBP"), Social Bond Principles ("SBP") and Sustainability Bond Guidelines 2018 (the "SBG"),¹ as administered by the International Capital Market Association (the "ICMA").² This Framework has been published in a separate document.³

As part of this engagement, Sustainalytics reviewed relevant public and non-public documentation to understand the sustainability impact of NH Bank's business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of NH Bank's GSS Bond proceeds.

This document contains Sustainalytics' opinion of the NH Bank Green, Social, and Sustainability Bond Framework and should be read in conjunction with that Framework.

¹ Sustainability Bonds are aligned with the four core components of both the Green Bond Principles and Social Bond Principles, with the former being especially relevant to underlying Green Projects and the latter to underlying Social Projects.

² Sustainability Bond Guidelines 2018 <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/>

³ http://www.nhbank.com/goEtcSubPage.do?srchGb=EN_NHIR_02&srchSiteGb=EN

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the NH Bank Green, Social, and Sustainability Bond Framework

Summary

Sustainalytics is of the opinion that the NH Bank Green, Social, and Sustainability Bond Framework is credible and impactful, and aligns with the Sustainability Bond Guidelines 2018, and the four core components of the Green Bond Principles 2018, and the Social Bond Principles 2018. Sustainalytics highlights the following elements of the Framework:

- Use of Proceeds:
 - The eight green categories and the six social categories eligible for the use of proceeds are recognized as impactful by the SBG 2018, which adheres to the GBP 2018 and the SBP 2018.
 - The eligible projects under the green use of proceeds will provide meaningful environmental contributions.
 - For hydrogen fuel cell technology, although hydrogen could be derived from natural gas, it produces energy with near-zero GHG emissions. Furthermore, as renewable energy sources (solar, wind, and biomass from sustainable feedstock) are economically scaled, the potential for increasing use of these alternate resources exists for hydrogen production.⁴ Sustainalytics views positively this use of proceeds sub-category, as hydrogen fuel cell technology supports the transition to a low-carbon transportation system, and encourages NH Bank to consider the life-cycle impact of sourced fuels.
 - Sustainalytics has a positive view of NH Bank's eligibility criteria for biomass energy which stipulate that feedstock for biomass energy generation will be procured from waste biomass (including marine, agriculture, forest), which complements the exclusionary criteria of not using biomass suitable for food production. Sustainalytics further recommends NH Bank to consider lifecycle emissions from biomass energy generation projects.
 - The provision of thermal grids to recover waste heat from industrial applications (waste-to-energy and manufacturing) reduces the need for additional resource inputs including electricity, as well as related GHG emissions, to meet the heating demands in industries. Additionally, NH Bank has confirmed through their exclusionary criteria that the development of thermal grids to recover energy will not be related to improving energy efficiency in fossil fuel generation facilities. Sustainalytics believes that thermal grids will enhance energy efficiency by recycling heat emissions.
 - The waste-to-energy process has significant environmental benefit relative to landfilled waste and is essential to derive useful forms of energy. However, Sustainalytics recommends that NH Bank consider measures to separate and recycle the fossil-fuel derived waste from the waste stream moving into the incineration process in order to reduce the negative impact of carbon emissions.
 - For the pollution prevention and control category, NH Bank will invest in technology to reduce nitrogen oxides emissions from industrial sources. NH Bank has confirmed, through its exclusionary criteria, that such technology will not be related to enhancing the energy efficiency of fossil fuel generation facilities. Sustainalytics believes such technology will reduce GHG emissions and have environmental benefits.
 - NH Bank's green buildings eligibility criteria are based on third-party certification standards such as LEED Gold or above, BREEAM Excellent or above, and equivalent national certifications with minimum standards such as G-SEED Green 2 based on the Act on Development and Support of Green Buildings. Sustainalytics has conducted an evaluation of the certifications and considers such certification standards as having a positive impact (see Appendix 1 for additional details on the certification schemes).
 - The Framework has defined targeted populations for social use of proceeds, as recommended by the Social Bond Principles 2018. Sustainalytics views positively the following government-aligned definitions:

⁴ U.S. Department of Energy (Alternative Fuels Data Center): https://afdc.energy.gov/fuels/hydrogen_benefits.html

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- Agriculture, rural areas and farmers are defined as per the Framework Act on Agriculture, Rural Community and Food Industry.
 - Companies that qualify for job creation include smart farm operations defined by the Ministry of Agriculture, Food and Rural Affairs.
 - SMEs are defined in Article 2 of the Enforcement Decree of the Framework Act on Small and Medium Enterprises.
 - Low-income individuals are those defined by the Korean Ministry of Health and Welfare (MOHW) and the Ministry of Education (MOE).
 - Tenants of public housing must meet the Special Act of Public Housing or be approved by Korea Housing Finance Corporation.
- While the Framework includes project-based lending, it also considers the inclusion of non-project-based lending activities and expenditures. Sustainalytics recognizes that the GBP, SBP and SBG prefer project-based lending and financing, and that there is, in general, less transparency with non-project-based lending. Nonetheless, Sustainalytics considers lending to the eligible categories as environmentally and socially impactful in Korea's local context.
- The exclusionary criteria consider the following: luxury sectors, potential industries with high exposure to child labour, adult entertainment, weapons, alcohol, tobacco, technologies that increase energy efficiency of fossil-fuel production and/or distribution, nuclear, large-scale hydropower (>25 MW), and biomass (suitable for food production). Sustainalytics is of the opinion that these exclusions strengthen the Framework.
- Given the broad application of the Framework, Sustainalytics recommends disclosing on issuance of the bonds, the specific projects intended to be funded through bond proceeds, and the relevant eligibility criteria.
- Project Evaluation and Selection:
 - NH Bank's project selection process involves initial project identification by NH Bank's various business units, followed by review and approval by the Sustainability Bond Working Group (SBWG). The SBWG will consist of members from cross-functional departments, including the Treasury Department, and the Agriculture & Food Finance Department. Sustainalytics considers that the collaboration between relevant business units is likely to strengthen the implementation of the framework and is in line with market practice.
- Management of Proceeds:
 - NH Bank will establish a GSS Bond Register to record the ongoing allocation of net proceeds. The proceeds will be earmarked within the register for allocation against the eligible assets.
 - Pending the allocation, all or a portion of net proceeds may be used to pay all or a portion of outstanding debts, and/or temporarily invest in cash, cash equivalents, investment grade or other marketable securities and short-term instruments, or other capital management activities. NH Bank's process with respect to the management of proceeds is in line with market practice.
- Reporting:
 - NH Bank has committed to provide annual allocation and impact reporting on its website, as long as the bonds are outstanding. Sustainalytics considers this in line with the market practice.
 - The allocation reporting will include the total amount allocated to Eligible Use of Proceeds as well as the balance amount of unallocated net proceeds. The breakdown of Eligible Use of Proceeds will also be provided, including by geographic location and sector.
 - The impact reporting may include environmental impact indicators, such as total renewable power generated, GHG emissions avoided, and energy saved, as well as social impact indicators, such as number of SME financed, number of farmers financed, number of jobs created, number and type of disadvantaged community helped, and amount of credit distributed.

Alignment with Sustainability Bond Guidelines 2018

Sustainalytics has determined that the NongHyup Bank Green, Social, and Sustainability Bond Framework aligns with the Sustainability Bond Guidelines 2018 and the four core components of the Green Bond Principles 2018, and the Social Bond Principles 2018. For detailed information please refer to Appendix 2: Sustainability Bond/ Sustainability Bond Programme External Review Form.

Section 2: Sustainability Performance of the Issuer

Contribution of Green, Social, and Sustainability Bond Framework to NH Bank's sustainability strategy

Sustainalytics is of the opinion that NH Bank articulates a strong commitment towards a comprehensive approach to sustainability, including inclusive and responsible financing. Although NH Bank has not set quantifiable targets for sustainable financing, the Group has demonstrated its commitment to promote inclusive economic growth in its Annual Report 2017 through the following efforts:⁵

- According to the Ministry of Agriculture, Food and Rural Affairs, NACF was established for the purpose of the development of a balanced Korean economy and the improvement of the socio-economic and cultural status and living standards of domestic farmers. It was then reorganized to form NH Bank to enhance the implementation of the government's agricultural policy. Additionally, NHFG's mission⁶ is based on creating value for the nation through "cooperation and innovation" and providing a "prosperous future" to the farmers. Overall, NH Bank's role within Korea enables the upliftment of standards in rural areas and the agriculture sector.
- NH Bank's 2018 Management Plans outline 'Key Tasks', including 'Productive Banking' that supports job creation, as well as social contribution through SME (agricultural) financing. NH Bank, through its business area of Agriculture & Food Finance, provides loans for agricultural policy funds to farmers and food companies (over KRW 19.3 trillion as of the end of 2017) with an aim of improving their quality of life and farming practices.
- NH Bank has promoted smart farms that integrate ICT technologies with agricultural practices by launching 'Smart Farm Total Fund' product in 2017 and provide young farmers in the agriculture industry with loans, training, and consulting services with the establishment of the 'Comprehensive Fund for Young Farmer's Smart Farm'.

Sustainalytics is of the opinion that NH Bank's sustainability strategy and actions demonstrate the importance the bank places on achieving positive environmental and social impacts. Sustainalytics also believes that NH Bank's green and/or social use of proceeds are aligned with its overall mission and the transition towards a sustainable and financially inclusive Korean economy.

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

While Sustainalytics recognizes that the proceeds from NH Bank's Framework will be directed towards eligible projects that are recognized by market norms (GBP, SBP, and SBG) to have positive impact, Sustainalytics is aware that such projects could also lead to negative environmental and social outcomes. Some key environmental and social risks associated with the eligible projects include a lack of pollution control in construction and development projects, increased exposure of local communities to adverse effects, and biodiversity loss.

Sustainalytics is of the opinion that NH Bank can mitigate such risks through the following systems and processes: (i) NH Bank's Risk Management Department which supports Risk Management Committee for decision-making and risk impact analysis, as well as Risk Management Council for policy enforcement, and (ii) NHFG's Code of Business Ethics guiding NH Bank's business values, such as the promotion of public good; social and national development; quality products and services for farmers; as well as contribution to the advancement of agriculture industry and rural areas. These systems and processes will enhance NH Bank's risk management efforts, which are further supported by the regulated nature of Korea's agricultural sector, and NACF's Board involvement for risk management aspects. Nevertheless, Sustainalytics encourages NH Bank to formalize its environmental and social risk management policies in a public document to enhance transparency.

Due to all the above-mentioned systems and processes, Sustainalytics is of the opinion that NH Bank has sufficient measures in place which will support the mitigation of environmental and social risks.

⁵ NongHyup Bank, Annual Report 2017: https://www.kfb.or.kr/eng/industry/2_National_Agricultural_Cooperation_Federation_2017.pdf

⁶ NongHyup Financial Group, Mission/Vision/Core Value: http://www.nhfggroup.com/Eng/aboutus/vision_1.aspx

Section 3: Impact of Use of Proceeds

All eight green categories and six social categories are recognized as impactful by the GBP 2018, and the SBP 2018.

Environmental Impacts

The green use of proceeds will be used for lending in the following eight categories:

1. Sustainable Agriculture
2. Renewable Energy
3. Energy Efficiency
4. Pollution Prevention and Control
5. Clean Transportation
6. Sustainable Water and Wastewater Management
7. Climate Change Adaptation
8. Green Buildings

The environmental categories defined in NH Bank Green, Social, and Sustainability Bond Framework are recognized as having beneficial environmental impacts by the Green Bond Principles 2018.

Social Impacts

The social use of proceeds will be used for lending in the following six categories:

1. Sustainable Agriculture
2. Employment Generation
3. SME Financing and Microfinance
4. Access to Essential Services
5. Affordable Basic Infrastructure
6. Affordable Housing

Importance of sustainable agriculture, employment generation, and access to essential services for Korea's agricultural industry, inclusive economic growth, and food security

As one of the world's most densely populated countries with more than 80% of the population living in urban areas, Korea is heavily reliant on imports of agricultural goods. According to the UN Food and Agricultural Organization, 70% of Korea's land is mountainous terrain, unsuitable for large-scale commercial farming with the agricultural sector contributing approximately 2.2% of the country's GDP in 2017.⁷ Moreover, Korea's cultivated land share is below the world average⁸ at approximately 15% of total land area, as of the end of 2015,⁹ and has been rapidly declining from last several decades with its reducing share of employment. Although Korea's main staple food grain, rice, reached a self-sufficiency rate of 104.7% in 2016,¹⁰ other food items, including wheat, maize, soybean, and livestock products, have seen growth in domestic consumption and are highly dependent on imports from overseas markets.

As systemic issues are on the rise with climate change, targeting food security and sustainable agricultural practices is increasingly becoming a priority for the country. According to the Ministry of Agriculture, Food and Rural Affairs, Korea's Agricultural Policy focuses on, among other things, inclusive growth through revitalization of rural communities, creation of jobs, expansion of export markets, and promotion of smart and sustainable agricultural practices.¹⁰ The country's Framework Act on Agriculture, Rural Community, and the Food Industry includes the formulation of a development plan with objectives for optimum targets for self-sufficiency in food and staples, and the promotion of comprehensive and planned development of agriculture, rural communities and the food industry.¹¹ The recent 2018-2022 Development Plan included strengthening farmers' income safety net, innovation for sustainable agriculture, food safety, and rural

⁷ U.S. Department of Agriculture (Foreign Agricultural Service): <https://www.fas.usda.gov/data/us-agricultural-export-opportunities-south-korea>

⁸ World Trade Organization, Korea's Agricultural Policy: https://www.wto.org/english/tratop_e/agric_e/cnt_policy_korea_e.pdf

⁹ World Bank Group, Korea's Arable Land: <https://data.worldbank.org/indicator/AG.LND.ARBL.ZS?locations=KR>

¹⁰ Ministry of Agriculture, Food and Rural Affairs, Brochure- Korea's Agricultural Policy: <http://www.mafra.go.kr/english/846/subview.do>

¹¹ Korea's Framework Act on Agriculture, Rural Community and Food Industry: <http://extwprlegs1.fao.org/docs/pdf/kor167013.pdf>

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welfare as four main policy targets⁸. The government has also announced plans to attract young workers into smart farming by 2022 with the provision of training courses and large-scale smart farm complexes¹².

In this regard, NH Bank's eligible project categories (Sustainable Agriculture, Employment Generation Through SME Financing and Microfinance, and Access to Essential Services) will be especially impactful in supporting the government's efforts for sustainable agriculture, small-scale farming, and food security in Korea. Furthermore, NH Bank's eligible projects on smart farming and underserved-targeted programs on essential services (medical, education, farming and training) will support climate-resilient economic development in Korea, while enhancing the ability of small-scale farmers to drive agricultural productivity through innovation and financial assistance.

Importance of affordable housing programs in Korea

Housing policy in Korea has historically been characterized by government intervention to support the construction of housing units by providing land to developers, financing initiatives, enacting various regulations, and direct actions by state-owned corporations.¹³ These measures were designed to ameliorate widespread housing shortages and deficiencies in quality and were largely successful in meeting these goals.¹⁴ However, housing affordability remains an ongoing issue, in particular in major cities, which have seen substantial population growth. In the city of Seoul, despite housing stock increasing by 2.3 times between 1990 and 2015, purchase prices and rent levels continue to increase, impacting affordability, particularly for tenants.¹⁵ To address this issue, government policy has moved towards more targeted programs for low-income earners, young people, and other vulnerable groups.¹⁶

Sustainalytics is of the opinion that the affordable housing use of proceeds category will create positive social impact by increasing lending to affordable housing for low- and medium-income families, young people, and other disadvantaged populations in Korea. NH Bank's affordable housing use of proceeds category is important in the context of affordability challenges in Korea and aligns with the SBP 2018. Sustainalytics views affordable housing lending as an impactful use of proceeds category, especially considering the eligibility criteria for beneficiaries is aligned with the government definitions to ensure benefits are provided to those in need.

Alignment with/contribution to SDGs

The UN Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. Responsible business and investment are essential to advancing the SDGs and achieving transformational change through the SDGs. NH Bank's Sustainability Bonds advance the following SDG goals and targets:

Use of Proceeds	SDG	SDG target
Sustainable Agriculture	2. Zero Hunger	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.
Energy Efficiency	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

¹² Future Farming, Smart Farmers: <https://www.futurefarming.com/Smart-farmers/Articles/2018/5/South-Korea-creates-4300-jobs-in-smart-farm-industry-283765E/>

¹³ Asia Pathways, Housing policy in the Republic of Korea: <https://www.asiapathways-adbi.org/2017/08/housing-policy-in-the-republic-of-korea/>

¹⁴ ADBI Working Papers, Housing policy in the Republic of Korea: <https://www.adb.org/sites/default/files/publication/183281/adbi-wp570.pdf>

¹⁵ The Seoul Institute, Affordable Rented Housing Strategies in Seoul: <http://global.si.re.kr/content/affordable-rented-housing-strategies-seoul>

¹⁶ Retalk Asia, Seoul's revitalisation of youth housing: <https://www.retalkasia.com/news/2017/10/30/seoul%E2%80%99s-revitalisation-youth-housing/1509329098>

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Affordable Basic Infrastructure		<p>countries taking action in accordance with their respective capabilities.</p> <p>9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p>
Pollution Prevention and Control	3. Good Health and Wellbeing	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
Clean 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.
Climate Change Adaptation		11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.
Green Buildings		11.B By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.
Affordable Housing		11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.
Sustainable Water and Wastewater Management	6. Clean Water and Sanitation	<p>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.</p> <p>6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.</p>
Sustainable Agriculture / Employment Generation	2. Zero Hunger	2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
	9. Industry, Innovation and Infrastructure	9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including

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		affordable credit, and their integration into value chains and markets.
Access to Essential Services	1. No Poverty	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.

Conclusion

NongHyup Bank has developed a Green, Social, and Sustainability Bond Framework to finance, or refinance, a broad range of eligible projects that intend to deliver positive environmental and/or social outcomes. Sustainalytics believes that NH Bank's Framework is aligned with the overall mission of the Group and that the environmental and/or social use of proceed categories will advance a number of key SDGs in Korea.

Sustainalytics highlights that aligning the social use of proceed definitions for target populations with the government's definitions and thresholds ensures that the social use of proceeds is credible with respect to targeting vulnerable populations.

Overall, Sustainalytics is of the opinion that NH Bank's Green, Social, and Sustainability Bond Framework is robust, transparent, and in alignment with the SBG 2018 and the four core components of the GBP 2018, and the SBP 2018.



Appendices

Appendix 1: Green Buildings Certifications Comparison

	LEED	BREEAM	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.	BREEAM (Building Research Establishment Environmental Assessment Method) was first published by the Building Research Establishment (BRE) in 1990. Based in the UK. Used for new, refurbished and extension of existing buildings.	G-SEED (Green Standard for Energy and Environmental Design) is a green building certification 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	Pass Good Very Good Excellent Outstanding	Green 4 Green 3 Green 2 Green 1
Areas of Assessment: Environmental Project Management	Integrative process, which requires, from the beginning of the design process, the identification and creation of synergies between the various project stakeholders regarding the construction choices and the technical systems.	Management (Man) addresses various aspects: project management, deployment, minimal environmental disturbance worksite and stakeholder engagement.	
Areas of Assessment: Environmental Performance of the Building	Energy and atmosphere Sustainable Sites Location and Transportation Materials and resources Water efficiency Indoor environmental quality Innovation in Design Regional Priority	Energy Land Use and Ecology Pollution Transport Materials Water Waste Health and Wellbeing Innovation	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 (e.g. New Construction, Major Renovation, Core and Shell	Prerequisites depending on the levels of certification + Credits with associated points This number of points is then weighted by item ¹⁷ and gives a BREEAM level of certification, which is based on the overall score obtained (expressed as a percentage). Majority of BREEAM issues are flexible, meaning that the client can choose which to comply with to build their BREEAM performance score.	Prerequisites (independent of level of certification) + Credits with associated points Individual credits are achieved in a number of categories. Category scores are then weighted to achieve an overall grade.

¹⁷ BREEAM weighting: Management 12%, Health and wellbeing 15%, Energy 19%, Transport 8%, Water 6%, Materials 12.5%, Waste 7.5%, Land Use and ecology 10%, Pollution 10% and Innovation 10%. One point scored in the Energy item is therefore worth twice as much in the overall score as one point scored in the Pollution item

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	Development, Schools- /Retail-/Healthcare New Construction and Major Renovations, Existing Buildings: Operation and Maintenance).	BREEAM has two stages/ audit reports: a 'BREEAM Design Stage' and a 'Post Construction Stage', with different assessment criteria.	
Performance display			
Accreditation	LEED AP BD+C LEED AP O+M	BREEAM International Assessor BREEAM AP BREEAM In Use Assessor	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.	Used in more than 70 countries: Good adaptation to the local normative context. Predominant environmental focus. BREEAM certification is less strict (less minimum thresholds) than HQE and LEED certifications.	Widely used in Korea and aligned with government standards. Strong overall qualifications. Little international recognition.

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

Section 1. Basic Information

Issuer name:	NongHyup Bank (NH Bank)
Sustainability Bond ISIN or Issuer Sustainability Bond Framework Name, if applicable: <i>[specify as appropriate]</i>	NongHyup Bank Green, Social, and Sustainability Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	December 14, 2018
Publication date of review publication: <i>[where appropriate, specify if it is an update and add reference to earlier relevant review]</i>	

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 and SBPs:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other <i>(please specify)</i> : | |

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 eight green categories and the six social categories for eligible use of proceeds are aligned with those recognized by the Green Bond Principles, the Social Bond Principles, and the Sustainability Bond Guidelines 2018. Although the financing is not exclusively project-based, Sustainalytics considers the eligible green and social projects to have positive environmental and social impacts and to advance many of the UN Sustainable Development Goals.

Use of proceeds categories as per GBP:

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

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

Use of proceeds categories as per SBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Affordable basic infrastructure | <input checked="" type="checkbox"/> Access to essential services |
| <input checked="" type="checkbox"/> Affordable housing | <input checked="" type="checkbox"/> Employment generation (through SME financing and microfinance) |
| <input type="checkbox"/> Food security | <input type="checkbox"/> Socioeconomic advancement and empowerment |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with SBP categories, or other eligible areas not yet stated in SBPs | <input type="checkbox"/> Other (please specify): |

If applicable please specify the social taxonomy, if other than SBPs:

NongHyup Bank Green, Social, and Sustainability Bond

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

A dedicated Sustainability Bond Working Group (SBWG) will oversee NH Bank's internal process in evaluating and selecting projects. The SBWG will consist of members from various departments, including the Treasury Department, and the Agriculture & Food Finance Department. This is in line with market practice.

Evaluation and selection

- | | |
|---|--|
| <input checked="" type="checkbox"/> Credentials on the issuer's social and green objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Sustainability Bond proceeds | <input type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (<i>please specify</i>): |

Information on Responsibilities and Accountability

- | | |
|--|---|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input checked="" type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section (*if applicable*):

NH Bank will track the net use of proceeds through a GSS Bond Register. The proceeds of the transaction will be deposited in the general funding accounts and earmarked for allocation to eligible assets. NH Bank has procedures to allocate proceeds to outstanding indebtedness, and/or to temporarily invest in cash, cash equivalents, investment grade securities or other marketable securities and short-term instruments or other capital management activities. This is in line with market practice.

Tracking of proceeds:

- Sustainability 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:

- | | |
|---|---|
| <input type="checkbox"/> Allocations to future investments only | <input checked="" type="checkbox"/> Allocations to both existing and future investments |
|---|---|

NongHyup Bank Green, Social, and Sustainability Bond

- | | |
|---|--|
| <input checked="" type="checkbox"/> Allocation to individual disbursements | <input checked="" type="checkbox"/> Allocation to a portfolio of disbursements |
| <input checked="" type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other <i>(please specify)</i> : |

4. REPORTING

Overall comment on section (if applicable):

NH Bank intends to publish information on its website within one year from issuance, and on an annual basis. Allocation reporting will include the total amount allocated to eligible projects as well as the balance of unallocated proceeds and, where possible, impact reporting will include relevant social and environmental metrics. Sustainalytics views NH Bank's allocation and impact reporting as aligned with market practice.

Use of proceeds reporting:

- | | |
|---|---|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input checked="" type="checkbox"/> Linkage to individual bond(s) | <input checked="" type="checkbox"/> Other <i>(please specify)</i> : Breakdown of the Eligible Use of Proceeds, by geographic location, sector and others. |

Information reported:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Allocated amounts | <input type="checkbox"/> Sustainability Bond financed share of total investment |
| <input checked="" type="checkbox"/> Other <i>(please specify)</i> : Balance amount of unallocated net proceeds. | |

Frequency:

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other <i>(please specify)</i> : | |

Impact reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other <i>(please specify)</i> : |

Frequency:

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other <i>(please specify)</i> : | |

Information reported (expected or ex-post):

- | | |
|---|--|
| <input checked="" type="checkbox"/> GHG Emissions / Savings | <input checked="" type="checkbox"/> Energy Savings |
| <input type="checkbox"/> Decrease in water use | <input type="checkbox"/> Number of beneficiaries |

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- | | |
|---|--|
| <input type="checkbox"/> Target populations | <input checked="" type="checkbox"/> Other ESG indicators (please specify): total renewable power generated, number of SME financed, number of farmers financed, number of jobs created, number and type of disadvantaged community helped, and amount of credit disbursed. |
|---|--|

Means of Disclosure

- | | |
|---|---|
| <input type="checkbox"/> Information published in financial report | <input type="checkbox"/> Information published in sustainability report |
| <input type="checkbox"/> Information published in ad hoc documents | <input checked="" type="checkbox"/> Other (please specify): Website |
| <input type="checkbox"/> 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.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

- | | |
|--|--|
| <input type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification / Audit | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Review provider(s):

Date of publication:

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

- i. **Consultant Review:** An issuer can seek advice from consultants and/or institutions with recognized expertise in environmental and social sustainability or other aspects of the issuance of a Sustainability Bond, such as the establishment/review of an issuer's Sustainability Bond framework. "Second Party Opinions" may fall into this category.
- ii. **Verification:** An issuer can have its Sustainability Bond, associated Sustainability Bond framework, or underlying assets independently verified by qualified parties, such as auditors. In contrast to certification, verification may focus on alignment with internal standards or claims made by the issuer. Evaluation of the environmentally and socially sustainable features of underlying assets may be termed verification and may reference external criteria.
- iii. **Certification:** An issuer can have its Sustainability Bond or associated Sustainability Bond framework or Use of Proceeds certified against an external green and social assessment standard. An assessment standard defines criteria, and alignment with such criteria is tested by qualified third parties / certifiers.
- iv. **Rating:** An issuer can have its Sustainability Bond or associated Sustainability Bond framework rated by qualified third parties, such as specialised research providers or rating agencies. Sustainability Bond ratings are separate from an issuer's ESG rating as they typically apply to individual securities or Sustainability Bond frameworks / programmes.

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