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The Banking and Financial Services Act (Act No. 7 of 2017)

The Banking and Financial Services (Green Loans) Guidelines, 2023

IN EXERCISE of the powers contained in section *one hundred and sixty-seven* of the Banking and Financial Services Act, 2017 the following Guidelines are hereby made:

PART I

PRELIMINARY

Short title

1. These Guidelines may be cited as the Banking and Financial Services (Green Loans) Guidelines, 2023.

Definitions

2. In these Guidelines, unless the context otherwise requires:

‘advance’ has the same meaning as assigned under the Banking and Financial Services Act. ‘Bank’ has the same meaning as assigned under the Banking and Financial Services Act.

‘borrower’ has the same meaning as assigned under the Banking and Financial Services Act.

‘climate change’ means a global phenomenon of long-term shift in temperatures and weather patterns.

‘eligible project’ means an activity as described in Schedule 1

‘financial service provider’ has the same meaning as assigned under the Banking and Financial Services Act.

‘green loans’ means any form of financing or instrument made available exclusively to finance or re-finance, in whole or in part, new and/or existing.

‘eligible projects’, which make a contribution to an environmental objective.

‘green loan principles’ means internationally recommended standards prescribed by the Loan Market Association to promote the development and integrity of a green loan market.

‘green loans risks’ means the likelihood of a financial loss occurring from an advance extended towards financing or refinancing a green project.

‘green project’ means—

(a) projects which aim to improve the environment, reduce pollution, reduce greenhouse gas emissions, enhance energy efficiency, and adaptation to climate change; and

(b) projects falling within the non-exhaustive categories of eligibility criteria set out in Schedule 1.

Application

1. These Guidelines shall apply to financial service providers;
2. The Bank is cognizant of the differences in the nature, size, interconnectedness, and complexity of financial service providers. In this regard, these Guidelines shall apply on a proportionate basis.

PART II

PREABLE AND PURPOSE

Preamble

4. The concerns around climate change, environmental, and sustainable economic development have placed environmental protection on the global agenda. In view of this, various initiatives have been introduced to foster sustainable economic development. The financial sector has a role in supporting green and sustainable economic development through the provision of green finance instruments to fund projects aimed at mitigating negative effects of climate change, biodiversity loss and land degradation. The financial sector has rapidly evolved over the recent years with the introduction of green and sustainable finance instruments. These instruments have been necessitated by the need for mitigating and adapting to negative environmental and climate change related financial risks. To maintain confidence and financial stability in the sector, there is need to provide guidance on the provision of green and sustainable finance instruments.

The Green Loans Guidelines have been developed in accordance with the Green Loans Principles which are widely accepted in international green loan markets. Therefore, these Guidelines aim to establish the credibility of the green characteristics of loans as well as maintain the integrity, soundness, and stability of the financial sector. In these Guidelines, the proportionality concept shall apply in order to commensurately treat financial service providers according to their size, complexity, interconnectedness, and substitutability.

5. The purpose of these Guidelines shall be to:

- (1) enable a financial service provider to contribute towards the attainment of sustainable development goals, Nationally Determined Contributions, national development plans, and green growth goals through the provision and uptake of green and sustainable finance;
- (2) establish standards for the provision of green loans;
- (3) ensure that a financial service provider monitors the disclosure, reporting and information sharing requirements on the part of the borrower; and
- (4) ensure that a financial service provider establishes appropriate policies, structures, and practices to provide green loans while maintaining the safety and stability of the financial system.

PART III GREEN LOAN GOVERNANCE

Board Oversight

6. The Board of a financial service provider shall be responsible for:

- (1) approving the financial service provider's green loan policy and strategy, which should be based on the financial service providers' overall business strategy. The green loans policy should include strategic references to the role of the institution in transformation towards environmental sustainability;
- (2) monitoring and evaluating the implementation of the green loan strategy;
- (3) defining the limits for various green loans;
- (4) ensuring that the institution has adequate resources to offer green loans; and
- (5) ensuring that senior management and relevant staff responsible for green loans management possess sound expertise and knowledge to accomplish their function and activities.

Senior Management Responsibilities

7. The Senior Management of a financial service provider shall be responsible for:

- (1) developing strategies, administrative procedures, and accountability mechanisms for implementation of green loans policies approved by the Board. The strategies and procedures should be developed in line with the Green Loans Principles and other recognized standards or requirements;
- (2) establishing an information management system for green loan management and reporting;
- (3) regularly reviewing staff capacity and establish capacity building plans to enhance competence in matters relating to green loan financing;
- (4) the dissemination of green loans policies to staff, clients, and other stakeholders. The advice or guidance to staff for communication with clients and stakeholders on implications of environmental factors will comprise information on:
 - (a) the long-term sustainability of businesses and economy;
 - (b) environmental assessment processes; and
 - (c) requirements and appropriate environmental risk mitigation measures; and
- (5) be responsible for disclosing their green loans activities and initiatives in reports to the Board, regulators, and stakeholders.

Administration of Green Loans Activities

8. (1) A financial service provider shall put in place appropriate measures to manage and supervise the activities relating to the provision of green loans such as:

- (a) ensuring compliance with the Green Loans Guidelines, and internal green loan policies;
- (b) conducting environmental risk assessment and monitoring of green product development; and
- (c) reporting on green loan activities to senior management;

PART IV

GREEN LOAN RISK MANAGEMENT

Green Loan Risk Management

9. In addition to the credit risk requirements set out in the Risk Management Guidelines, a financial service provider shall:

- (1) develop and improve policies, systems, and procedures for green loan risk management, identify business focus and priority sectors, for the extension of green loans in accordance with national environmental laws and regulations, sector guidelines and sector-specific entry policies;
- (2) develop a client green loan risk rating standard to assess and categorize clients' green loan risks. The assessment and categorization results should form the basis for clients rating, loan approval, portfolio management and exit decisions;
- (3) require clients with major green loan risks to develop and implement action plans for management of the risks involved;
- (4) put in place comprehensive and effective stakeholder communication mechanisms and seek risk mitigation measures such as third party sharing of potential environmental risk;
- (5) integrate effective risk controls in the innovation of green loan business processes, products, and services to enhance sound commercial viability;
- (6) effectively identify, assess, monitor, control or mitigate green loans risks in business operations;
- (7) develop green loans risk management systems which will strengthen green loans policies and procedures;
- (8) ensure that green loans that have high risks, have agreements requiring clients to provide green loans risk reports, containing client representations and warranties on improving green loans risk management;

- (9) design covenants and set-offs for clients to be subjected to supervision by the financial service provider, and provide remedies for financial service providers in case of any breach of contract by the client;
- (10) develop and implement specific portfolio management measures for clients with major potential green loan risks; and
- (11) closely monitor the impact of national policies on clients' operational performances, maintain active monitoring and analysis, and make timely adjustment to risk categorization of assets, loan provisioning and loss write-off.

PART V

GREEN EVALUATION

Evaluation of an Application for a Green Loan

10. (1) In evaluating an application for a green loan, a financial service provider shall ensure that a green loan meets the following minimum criteria:

- (a) Loan proceeds must be for a green project, as provided for under Schedule 1, that providing a clear environmental benefit that can be assessed, quantified, measured, reviewed and tracked as shown in Schedules 2, 3, 4, 5, 6, & 7;
 - (b) There is a mechanism for communication on the;
 - (i) environmental sustainability objectives;
 - (ii) process by which the borrower determines that its project fits within the green project eligibility criteria; and
 - (iii) related eligibility criteria including, to the extent applicable, any excluded criteria and the process to be applied to identify and manage potentially material environmental risks associated with the project.
 - (c) The proceeds of the green loan will be tracked in an appropriate manner to promote and maintain transparency and integrity of the green loan market; and
 - (d) Maintain up to date information on the intended use of the green loan proceeds and the anticipated material developments.
- (2) A financial service provider shall conduct due diligence based on sector and geographic features of clients or their projects, to ensure a comprehensive assessment.
- (3) A loan application that does not meet (1) shall not be classified as a Green Loan application.

Requirements for Green Loans Assessment

11. Before extending a green loan, a financial service provider shall assess the application taking into account whether the borrowing or refinancing plan includes:

- (a) the scope of projects to which proceeds will be allocated (Schedule 1);
- (b) proceeds management, tracking and reporting methods (Schedule 3);
- (c) a risk management plan;
- (d) computation of expected environmental, and social benefits (Schedule 5); and
- (e) external review or self-certification process (if any) (Schedule 7).

PART VI

INTERNAL MANAGEMENT AND DISCLOSURE

Internal Management

12. (1) A financial service provider shall include green loans performance as part of internal compliance review, organize regular internal audit on green loans performance. In case of major issues identified in such reviews, a financial service provider shall follow the relevant accountability standards.

(2) A financial service provider shall develop an internal reporting and accountability system for major risks related to client green loans. In this case, a financial service provider shall take measures to mitigate the risks in a timely manner and report to the Bank.

(3) A financial service provider shall disclose its green loans strategy and policies in accordance with guidelines outlined in the Corporate Governance Directives.

Loan Disclosure

13. (1) A financial service provider shall, as per Schedule 3, ensure that:

- (i) Borrowers report or disclose the usage status of funds at least once a year until all the proceeds are used; and
- (ii) Borrowers report or disclose such information in a timely manner even after all the proceeds are allocated and if there has been any major change in the situation. A major change in the situation includes, but is not limited to, the sale of the asset or project for which the proceeds are used, a serious accident in the project or the occurrence of an event that affects green characteristics. (Schedules 3 & 4).

PART VII

GENERAL PROVISIONS

Amendments

14. These guidelines may be reviewed by the Bank as deemed necessary.

Effective Date

15. These Guidelines shall come into force on the date they are published in the Government Gazette notice

Dated at Lusaka the 29th day of September, 2023.

SCHEDULE 1:
ELIGIBILITY CRITERIA FOR GREEN PROJECTS

No.	Categories of Eligible Green Projects/Eligibility Criteria	Description
1	Renewable energy	Production, transmission, appliances, and products
2	Energy efficiency	New and refurbished buildings, energy storage, heating, smart grids, appliances, and products
3	Pollution prevention and control	Reduction of air pollutants, greenhouse gas control, soil remediation, waste prevention, waste reduction, waste recycling and energy/emission-efficiency waste to energy
4	Environmentally sustainable management of living natural resources and land use	Environmentally sustainable agriculture, environmentally sustainable animal husbandry; climate smart farm inputs such as biological crop protection or drip-irrigation; environmentally sustainable fishery and aquaculture, environmentally sustainable forestry, including afforestation and reforestation, and preservation or restoration of natural landscapes
5	Terrestrial and aquatic biodiversity conservation	The protection of riverbanks, lakeshores, and/or marine and watershed environments; – clean transportation – such as electric, hybrid, public, rail, non-motorised, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions
6	Sustainable water and wastewater management	Sustainable infrastructure for clean and/or drinking water, wastewater treatment, sustainable urban drainage systems and river training and other forms of flooding mitigation
7	Climate change adaptation	Information support systems, such as climate observation and early warning systems, climate smart agriculture, climate smart infrastructure, weather index insurance
8	Eco-efficient and/or circular economy adapted products, production technologies and processes	Development and introduction of environmentally sustainable products, with an eco-label or environmental certification, resource-efficient packaging, and distribution
9	Sustainable /green Buildings	Green buildings which meet regional, national, or internationally recognised standards or certifications

Other considerations for categories include the following:

- a) Nature based assets: Forestry; Agriculture; Land use;*
- b) Transport: EV's; Mass Transport; Low emission Transport;*
- c) Food: ICT – Market information and weather information; agriculture development Planning; Innovation for productivity;*
- d) Health and;*
- e) Infrastructure: Deployment of crosscutting solutions (Mitigation, adaptation and resilience); Climate information.*

Note- “The above eligibility criteria are the same as the categories provided in the international standards on Green Bond Principles and Green Loans Principles and reference shall be made to any subsequent updates thereof. The list is intended to be indicative and captures the most commonly used types of projects. There are several categories and sets of criteria defining Green Projects already in existence in the market that can be used as complementary guidance. Borrowers and other stakeholders can refer to examples through links listed on the related parties webpages as well as on websites for competent bodies and the Government of the Republic of Zambia.

SCHEDULE 2:

POSSIBLE EXAMPLES OF NEGATIVE ENVIRONMENTAL IMPACTS

The following is not an exhaustive list and only shows some of the examples. These are major examples of potential negative impacts on the environment. Some projects may have other negative environmental impacts and there could even be negative social impacts. Therefore, it is important that each project is individually examined.

The principle in the examination should always be, "what is the net effect after the initiative has been deployed?" if the net effect is compensating for all the issues that arise in the process of realising the initiative then it is good and the mitigation measures are able to address the issues.

(1) PROJECTS FOR RENEWABLE ENERGY	
<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
Solar power generation projects	(i) Ecological disruption or adverse effects on ecosystems caused by massive land development (Maladaptation) (ii) Outflow of muddy water (iii) Spilling of soil such as topsoil (iv) Light pollution and adverse effects on scenery (v) Noise and vibration from the relevant facilities (vi) Disposal of solar products - panels, batteries, and so on
Wind power generation projects	(i) Adverse effects on ecosystems (such as bird strikes) (ii) Low-frequency noise and vibration (iii) Adverse effects on the scenery, and so forth
Hydroelectric power generation projects	Adverse effects on and destruction of ecosystems entailing large-scale land development (e.g. disturbing the upstream migration of fish), and so forth
Biomass power generation projects	(i) Increase in GHG emission in the overall lifecycle of biomass fuel (ii) Air pollution caused by emissions from facilities and vehicles carrying biomass fuel (iii) Adverse effects on environment at fuel-producing areas such as illegal logging, development of peatland and indirect land use change (iv) Water pollution due to drainage from facilities ✓ Adverse effects on ecosystems due to waste heat generation (v) Noise, and so forth
Geothermal power generation projects	(i) Adverse effects on ecosystems due to large-scale land development (ii) Air pollution from toxic volatile substances ✓ Adverse effects on the scenery, and so forth
Projects to install, manage, and maintain power lines that transmit electricity generated by renewable energy and batteries that store the electricity, adjust to demand and supply, and store energy	(i) Adverse effects on ecosystems (cases where power lines and batteries are installed in natural reserves, etc.), and so on
Projects to manufacture appliances and products used in the aforementioned projects, such as solar panels, power lines, and batteries	(ii) Release of toxic chemicals produced in the production process of equipment into the environment, and so on
Projects that engage in renewable energy-derived heat utilization, such as solar heat and geothermal heat	Adverse effects on ecosystems due to changes in the temperature and quality of groundwater and soil, and so on

(2) PROJECTS FOR ENERGY EFFICIENCY	
<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
Projects for the construction of new ZEH, ZEB, and other highly energy efficient buildings	(i) Noise and vibration associated with construction; (ii) Adverse effects on the surrounding environment such as light pollution, and so on
Projects for the renovation of offices, manufacturing plants, and houses for better energy efficiency to obtain an environmental certification	(i) Noise and vibration associated with construction; (ii) Dispersal of hazardous wastes such as asbestos, and so on

Projects to introduce highly energy efficient equipment and facilities into offices, plants, and houses	Adverse effects arising from inappropriate disposal of old equipment and facilities, and so on
Projects for the development and introduction of smart grids	Noise and vibration associated with construction, and so on

(3) PROJECTS FOR POLLUTION PREVENTION AND CONTROL

<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
Projects that contribute to the realization of a circular economy	✓ Adverse effects due to the dispersion and release of toxic chemicals ✓ Air pollution resulting from waste disposal and water contamination due to wastewater ✓ Increased environmental load over lifecycle due to inefficient recycling practices, and so on
Projects to control the release of toxic chemicals into the environment by preventing their leakage, volatilization, and infiltration	✓ Adverse effects arising from the inappropriate disposal of toxic chemicals ✓ Adverse effects arising from the release of alternative substances into the environment, and so on
Projects to prevent the release of fluorocarbons into the atmosphere, to collect and to destroy fluorocarbons	(Take careful note of whether adverse environmental effects likely to occur depending on the projects)
Projects to build facilities that contribute to the advanced treatment and recycling of wastewater from manufacturing plants, etc.	✓ Adverse effects arising from the inappropriate disposal of sludge containing toxic chemicals such as heavy metals, and so on
Projects for the treatment of polluted soil	✓ Adverse effects arising from the inappropriate disposal of polluted soil ✓ Air pollution from gas emissions and water contamination from wastewater, which are associated with the disposal of polluted soil, and so on

(4) PROJECTS FOR THE SUSTAINABLE MANAGEMENT OF LIVING NATURAL RESOURCES

<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
- Projects to acquire sustainable fishery and aquaculture certifications such as the MSC (Marine Stewardship Council) and ASC (Aquaculture Stewardship Council) certifications or Zambian equivalent.	(Take careful note of whether adverse environmental effects likely to occur depending on the projects)
Projects to acquire sustainable forestry certifications such as the FSC (Forest Stewardship Council) certification	(Take careful note of whether adverse environmental effects likely to occur depending on the projects)

(5) PROJECTS FOR BIODIVERSITY CONSERVATION	
<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
Projects for the conservation of wetlands and coral reefs through such measures as improvement of water quality	✓ Adverse effects on ecosystems due to large-scale land development ✓ Disturbance to gene pool in the target area, and so on
Projects to control bird or animal damage and non-native species to prevent damage inflicted to the ecosystem by deer and other birds and animal or non-native species	✓ Adverse effects on ecosystem such as lead poisoning of wild birds caused by lead bullets used in controlling birds and animals ✓ Adverse effects on ecosystem caused by scattering of seeds when removing non-native plants, and so on.
Projects for the transformation of river walls into more natural forms	✓ Adverse effects on ecosystems due to large-scale land development, and so on

(6) PROJECTS FOR CLEAN TRANSPORTATION	
<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
Projects for the development and manufacture of low emission electric and hydrogen vehicles, and the development and maintenance of infrastructure for using such vehicles	✓ Adverse effects on ecosystems due to large-scale land development ✓ Adverse effects on the environment arising from the inappropriate mining, use and disposal of metal including rare metal, and so on
Projects to enhance the efficiency of logistics systems by the systematic installation of logistics bases, aggregation of transportation networks, modal shifts, and coordinated transportation and delivery.	✓ Adverse effects on ecosystems due to large-scale land development ✓ Increase in noise, vibration and air pollution, etc. due to concentration of transport system or operation in a specific location or during specific hours, and so on
Projects to introduce devices (such as digital tachographs) to support eco-driving	(Take careful note of whether adverse environmental effects likely to occur depending on the projects)
Projects for the development of facilities for park-and-ride and car-sharing systems	✓ Noise and waste around project sites, and so on

(7) PROJECTS FOR SUSTAINABLE WATER RESOURCES MANAGEMENT	
<i>Possible Projects</i>	<i>Possible Negative Impacts on the Environment</i>
Projects to conserve the water circulation cycle such as water source protection and penetration of rainwater into soils	✓ Adverse effects on ecosystems due to large-scale land development ✓ Introduction of non-native species or other inappropriate plants, and so on

Projects to develop and improve flood prevention facilities	✓ Adverse effects on ecosystems due to large-scale land development, and so on
Projects for seawater desalination	✓ Adverse effects on ecosystems due to the release of concentrated water ✓ Adverse effect of global warming caused by use of equipment and methods with poor energy efficiency, and so forth

8) PROJECTS FOR CLIMATE CHANGE ADAPTATION	
Possible Projects	Possible Negative Impacts on the Environment
Projects to reinforce disaster prevention functions of logistics, railways, ports, airports, roads, water supply infrastructure, waste disposal facilities, traffic safety facilities, and private real estate	✓ Adverse effects on ecosystems due to large-scale land development, and so on

(9) PROJECTS FOR ECO-EFFICIENT PRODUCTS, MANUFACTURING TECHNOLOGIES, AND PROCESSES	
Possible Projects	Possible Negative Impacts on the Environment
Projects to manufacture products that meet the requirements of environmental certifications	✓ Adverse effects on ecosystems due to large-scale land development ✓ Leakage of hazardous materials used in the manufacturing processes of the products ✓ Adverse effects on the environment arising from the inappropriate mining, use and disposal of metal including rare metal, and so on
Projects for the research, development, and introduction of technology and products that contribute to reducing the amount of GHGs	✓ Adverse effects on ecosystems due to large-scale land development ✓ Leakage of hazardous materials used in the production process, and so on

Source: Ministry of the Environment, Japan (2020). "Green Loan and Sustainability Linked Loan Guidelines 2020", Annex 2, page 73

Projects for eco-efficient products, manufacturing technologies, and processes	Manufacturing of products that meet the requirements of environmental certifications	XX	KYYY million	ZZ t-CO ₂ /year XX t/year
		XX	KYYY million	ZZ t-CO ₂ /year
	Subtotal	(Refinancing: ZZ)	(Refinancing: KZZ million)	
		XX	KYYY million	
		(Refinancing: ZZ)	(Refinancing: KZZ million)	ZZ t-CO ₂ /year
Unallocated proceeds (managed via short-term financial assets)			KYYY million	

Source: Ministry of the Environment, Japan (2020). "Green Loan and Sustainability Linked Loan Guidelines 2020", Annex 4, page 79

SCHEDULE 3:

EXAMPLES OF DISCLOSURE INFORMATION

The following is not an exhaustive list and only shows some of the examples based on international standards and applicable to the Zambian Green Loans Market.

(1) Examples of information disclosure by Green Projects

<i>Project category</i>	<i>Possible Projects</i>	<i>Outline</i>	<i>Progress</i>	<i>Amount of proceeds allocated</i>	<i>Environmental benefits</i>
Projects for renewable energy	Wind power generation	Project to construct wind power facilities, generate power at the facilities, and sell electricity through feed-in tariffs (FIT)	Under construction (To start operations in MM/YYYY)	KXXX million	Amount of CO ₂ reduced ZZ t-CO ₂ /year
Projects for pollution prevention and control	Recycling of waste	Project to construct fuel manufacturing facilities and manufacture fuel via waste recycling	Construction to start in MM/YYYY	KXXX million	Reduction in the waste incinerated: XX t/year
Projects for the sustainable management of living natural resources	Planting	Project to plant trees to conserve and recover ecosystems in the XX region	Completed	KXXX million	Area of forests regenerated by planting: X ha
Total				KXXX million	

(2) Example of information disclosure (aggregated information) by category

<i>Project category</i>	<i>Possible Projects</i>	<i>Number of projects</i>	<i>Amount allocated</i>	<i>Environmental benefits (CO₂ reduction)</i>
Projects for renewable energy	Solar power generation	XX	KYYY million	ZZ t-CO ₂ /year
	Wind power generation	XX	KYYY million	ZZ t-CO ₂ /year
	Manufacture of batteries	XX	KYYY million	ZZ t-CO ₂ /year
	Subtotal	(Refinancing: xx)	(Refinancing: KYYY million)	ZZ t-CO ₂ /year
Projects for energy efficiency	Construction of new energy efficient buildings	XX	KYYY million	ZZ t-CO ₂ /year
	Renovation of buildings for better energy efficiency	XX	KYYY million	ZZ t-CO ₂ /year
	Subtotal	(Refinancing: xx)	(Refinancing: KYYY million)	ZZ t-CO ₂ /year
Projects for eco-efficient products, manufacturing technologies, and processes	Manufacturing of products that meet the requirements of environmental certifications	XX	KYYY million	ZZ t-CO ₂ /year XX t/year
	Subtotal	(Refinancing: ZZ)	(Refinancing: KZZ million)	ZZ t-CO ₂ /year
		XX (Refinancing: ZZ)	KYYY million (Refinancing: KZZ million)	ZZ t-CO ₂ /year
Unallocated proceeds (managed via short-term financial assets)			KYYY million	

SCHEDULE 4:

EXAMPLES OF SPECIFIC INDICATORS

The following is not an exhaustive list and only shows some of the examples based on international standards and applicable to the Zambian Green Loans Market.

<i>Project Category</i>	<i>Index Examples</i>	<i>Details</i>
Projects for renewable energy	CO2 emissions reduced (t-CO2)	Calculate by comparing the estimated CO2 emissions (t-CO2) when the project is not implemented and after the project is implemented
	Amount of power generated by renewable energy (GWh)	Amount of power generated by renewable energy at facilities constructed through the project (GWh)
	Rate of use renewable energy in the manufacturing process (%)	Compare the rate of use of renewable energy in the manufacturing process (percentage of renewable energy consumption in total energy consumption) before and after the implementation of the project
Projects for energy efficiency	CO2 emissions reduced (t-CO2)	Calculate by multiplying the amount of energy reduced by the project (kL) and CO2 emission coefficient (t-CO2/kL)
	Amount of energy consumption reduced (kL, t, m3, MWh)	Calculate by comparing the estimated energy consumptions (kL) when the project is not implemented and after the project is implemented.
	Number of environmental certifications obtained	The number of environmental certifications, such as LEED, CASBEE, and BELS, that were obtained for buildings involved in the project
	Number of energy saving facilities and products introduced	The number of energy-saving facilities (e.g. freezers and refrigerators switched from HFC to non-chlorofluorocarbon) and energy-saving products
Projects for pollution prevention and control	Amount of air pollutants reduced	Amount of air pollutants (sulphur oxide (SOx), nitrogen oxide (NOx), and particulate matter) emissions in to the air reduced by the implementation of the project (t)
	Amount of water pollutants reduced	Amount of water pollutants (chemical oxygen demand and biochemical oxygen demand (BOD)) discharge into public waters reduced by the project implementation (t)
	Quantity of chemical substance emissions controlled (P)	Under consideration
	Amount of landfill waste reduced (t)	Amount of landfill waste reduced by project implementation (t)
	Amount of materials that reduce environmental loads (t)	Amount of materials such as recycled materials and renewable resources that reduce environmental loads being used (t)
	Amount of waste recycled (t)	Amount of waste recycled (t)
	Amount of waste generated (%)	Change in the amount of waste generated before and after the implementation of project
Projects for sustainable management of natural resources and land use	Area of a forest managed in a sustainable manner (ha)	Area of a forest managed in a sustainable manner(ha)
	Area where improvements have been made on urban environments in response to climate change, for biodiversity, etc. (m2)	Area where improvements have been made on urban environments in response to climate change, for biodiversity, etc., such as improvements in vegetation or ground surface in urban development (m2)
Projects for biodiversity conservation	Area of healthy coral conserved by water quality improvement project (ha)	Area of healthy coral, which hasn't been whitened, conserved by projects of water quality improvement, etc. (ha)
	Total distance of riverbanks restored similar to natural shape by projects (km)	Total distance of riverbanks restored similar to natural shape by projects (km)
	Acquisition of certificate for biodiversity-friendly urbanization and creation of environment	The number of ABINC and JHEP (Japan Habitat Evaluation and Certification Program) certificates acquired or the area
	Ecosystem conservation area (ha)	Area of ecosystem conservation through biodiversity conservation projects and products and services sold (ha)

<i>Project Category</i>	<i>Index Examples</i>	<i>Details</i>
	Conservation and amount used of bio-resources (t)	Amount of bio-resources conserved and used through products and services sold (t)
	Number of endangered species recovered	Number of endangered species recovered through conservation by biodiversity conservation projects and sales of products and services (population)
	Amount improved in ecological footprint (ha) of products and services contributing to conservation of biodiversity conservation	Ecological footprint (ha; amount of demand of ecosystem service, required for producing resources to be consumed and absorbing CO ₂ emitted in socio-economic activities, expressed in terms of the earth's area) improved through biodiversity conservation projects and products and services sold.
Projects for clean transportation	CO ₂ emissions reduced (t-CO ₂)	Calculate by comparing the estimated CO ₂ emissions (t-CO ₂) when the project is not implemented and after the project is implemented
	Percentage of next generation vehicles (%)	Percentage of next-generation vehicles in the total number of new vehicles sold (%)
	Passenger transport capacity	Number of passengers (people) × Distance (km) and/or Number of passengers or Total traffic volume (t) × Distance (km) and/or Total traffic volume (t)
	Fuel consumption performance	Estimated reduction in fuel consumption
	Change in traffic volume	Changes in automobile traffic and rail traffic volume
Projects for sustainable water resources management	Area of wetted surface reduced (ha)	Reduction in the estimated area of wetted surface in the event of heavy rain from the implementation of the project (ha)
	Number of beneficiaries (persons/households)	Number of persons/households that gain access to water through the project implementation
	Annual water conservation (m ³)	Total amount of annual water use (m ³) before and after the project and the rate of reduction in water use (%) before and after the project
	Effluent treatment efficiency	The amount of effluent treatment before and after the project and reused amount or amount contributed to reduction (m ³ /a) and ratio of contribution to reduction (%)
Projects for climate change adaptation	Area of a forest or a watershed managed in a sustainable manner (ha)	Area of a forest or a watershed managed in a sustainable manner (ha)
	Area of wetted surface reduced (ha)	Reduction in the estimated area of wetted surface in the event of heavy rain from the implementation of the project (ha)
Projects for eco-efficient products, manufacturing technologies, and processes	Reduction in CO ₂ emissions per ton of products (t-CO ₂ /t)	Calculate by comparing CO ₂ emissions/ton of products (CO ₂ emissions (t-CO ₂) ÷ production volume (t)) before and after the implementation of the project
	Amount of materials with environmental load reducing effect used (t)	The amount of recycled materials and renewable resources with environmental load reducing effect used (t)
	Amount of raw materials reduced (t)	Calculate by comparing the raw materials used (t) before and after the implementation of the project
Projects for green buildings	Energy efficiency (kWh/m ² of GBA)	Annual energy usage per total floor area, ratio of energy usage reduction or ratio of contribution to reduction (%), ratio of power generated using renewable energy at the concerned facility to energy consumption (%)
	Carbon performance	Annual CO ₂ emission per total floor space (kgCO ₂ /m ²), annual reduction/contribution to reduction of GHG emissions (in terms of CO ₂), annual reduction/contribution to reduction of carbon emission (%)
	Water resource utilization ratio	Annual water resource consumption per total floor space (m ³ /m ²), annual total water consumption before and after the project (m ³) or reduction in water consumption before and after the project (%), amount of rain water collected and the amount of recycled rain water (m ³ /a)
	Waste management	Minimization of waste in total volume of annual waste, ratio of annual reused or recycled amount (%) and/or minimization of waste, annual reused and recycled amount (t)
	Number of certificates acquired	Types and evaluation of certificates acquired such as LEED

Source: Ministry of the Environment, Japan (2020). "Green Loan and Sustainability Linked Loan Guidelines 2020", Annex 4, page 79

SCHEDULE 5:

EXAMPLES OF HOW TO CALCULATE ENVIRONMENTAL BENEFITS

The following is not an exhaustive list and only shows some of the best standards examples. Since each method is simplified to facilitate easy understanding, it should be noted that it may not be appropriate to apply these methods without modification in individual projects depending on individual businesses.

<i>1. Cases where the reduction in CO2 emissions serves as an indicator of environmental benefits from solar power generation projects</i>	
Precondition	Use the average CO2 emissions coefficient from all power sources at a project site as an electricity-related CO2 emissions coefficient. For instance, when the project site is in the area serviced by a company of similar rating to say a Green Rated Electric Power Company, the emissions coefficient is 0.500 t-CO2/MWh. ("CO2 emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry responsible for Green Economy and Environment)). -Calculation to be based on most recent CO2 emissions coefficient. - Annual energy generation: 2,000 MWh/year - Annual power consumption by auxiliary equipment: 10 MWh/year
Calculation method referenced	Operation rules of the certification system of CO2 emissions reduction through the use of Green Energy. (Posted on the official website of the Ministry responsible for Green Economy and Environment) and ZEMA)
Calculation formula	$[(2,000 \text{ MWh/year}) - (10 \text{ MWh/year})] \times [0.500 \text{ t-CO}_2/\text{MWh}] = [995 \text{ t-CO}_2/\text{year}]$ Reduction in CO2 emissions = [(annual energy generation) – (annual power consumption by auxiliary equipment)] x [electricity-related CO2 emissions coefficient].
<i>2. Cases where the reduction in CO2 emissions serves as the indicator of environmental benefits from wind power generation projects</i>	
Precondition	Use the average CO2 emissions coefficient from all power sources at a project site as an electricity-related CO2 emissions coefficient. For instance, when the project site is in the area serviced by a company of similar rating to say Green rated Electric Power Company (as benchmark), the CO2 emissions coefficient will be 0.468 t-CO2/MWh. ("CO2 emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry responsible for Green Economy and Environment or (ZEMA)). Calculation to be based on most recent CO2 emissions coefficient - Annual energy generation: 3,000 MWh/year. - Annual power consumption by auxiliary equipment: 10 MWh/year.
Calculation method referenced	Operation rules of the certification system of CO2 emissions reduction through the use of Green Energy (Posted on the official website of the Ministry responsible for Green Economy and Environment) and ZEMA)
Calculation formula	$[(3,000 \text{ MWh/year}) - (10 \text{ MWh/year})] \times 0.468 \text{ t-CO}_2/\text{MWh} = 1,399 \text{ t-CO}_2/\text{year}$ Reduction in CO2 emissions = (annual energy generation - annual power consumption by auxiliary equipment) x (electricity-related CO2 emissions coefficient)
<i>3. Cases where the reduction in CO2 emissions serves as the indicator of environmental benefits from woody biomass power generation projects</i>	
Precondition	Use the average CO2 emissions coefficient from all power sources at a project site as an electricity-related CO2 emissions coefficient. For instance, when the project site is in the area serviced by a company of similar rating to say a Green Rated Electric Power Company, the CO2 emissions coefficient is 0.319 t-CO2/MWh. ("CO2 emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry of Green Economy and Environment or ZEMA)) *Calculation to be based on most recent CO2 emissions coefficient - Annual energy generation: 20,000 MWh/year - Annual power consumption by auxiliary equipment: 300 MWh/year
Calculation method referenced	$(20,000 \text{ MWh/year} - 300 \text{ MWh/year}) \times 0.319 \text{ t-CO}_2/\text{MWh} = 6,284 \text{ t-CO}_2/\text{year}$ Reduction in CO2 emissions = (annual energy generation - annual power consumption by auxiliary equipment) x electricity-related CO2 emissions coefficient.
<i>4. Cases where the reduction in CO2 emissions serves as the indicator of environmental benefits from small and medium hydroelectric power generation projects</i>	
Precondition	Use the average CO2 emissions coefficient from all power sources at a project site as an electricity-related CO2 emissions coefficient. For instance, when the project site is in the area serviced by a company of similar rating to say Green Rated Electric Power, the emissions coefficient is 0.643t-CO2/MWh. ("CO2 emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry of Green Economy and Environment or ZEMA)) - Annual energy generation: 10,000 MWh/year. - Annual power consumption by auxiliary equipment: 100 MWh/year.

Calculation method referenced	Operation rules of the certification system of CO ₂ emissions reduction through the use of Green Energy (Posted on the official websites of the Ministry responsible for Green Economy and Environment or ZEMA).
Calculation formula	$-(10,000 \text{ MWh/year} - 100 \text{ MWh/year}) \times 0.643 \text{ t-CO}_2/\text{MWh} = 6,366 \text{ t-CO}_2/\text{year}.$ -Reduction in CO ₂ emissions = (annual energy generation - annual power consumption by auxiliary equipment) x electricity-related CO ₂ emissions coefficient.
<i>5. Cases where the reduction in CO₂ emissions serves as the indicator of environmental benefits from geothermal power generation projects</i>	
Precondition	Use the average CO ₂ emissions coefficient from all power sources at a project site as an electricity-related CO ₂ emissions coefficient. For instance, when the project site is in the area serviced by a company of similar rating to say Tohoku Electric Power of Japan, the emissions coefficient is 0.522 t-CO ₂ /MWh. ("CO ₂ emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry of Green Economy and Environment or ZEMA)). Calculation to be based on most recent CO ₂ emissions coefficient - Annual energy generation: 80,000 MWh/year - Annual power consumption by auxiliary equipment: 900 MWh/year.
Calculation method referenced	Operation rules of the certification system of CO ₂ emissions reduction through the use of Green Energy (Posted on the official website of the Ministry responsible for Green Economy and Environment or ZEMA).
Calculation formula	$(80,000 \text{ MWh/year} - 900 \text{ MWh/year}) \times 0.522 \text{ t-CO}_2/\text{MWh} = 41,290 \text{ t-CO}_2/\text{year}$ Reduction in CO ₂ emissions = (annual energy generation - annual power consumption by auxiliary equipment) x electricity-related CO ₂ emissions coefficient
<i>6. Cases where the reduction in CO₂ emissions of the entire building serves as the indicator of environmental benefits in projects to introduce energy efficient appliances and cogeneration systems into buildings</i>	
Precondition	<Precondition> - Steam is produced by a city gas boiler while electricity is purchased - Annual power consumption: 2,500 MWh/year - Annual city gas consumption: 356,000 Nm ³ /year <After introduction> - Some of the appliances are changed to energy efficient equipment - City gas boilers are removed and a city gas cogeneration system is introduced. All steam produced by boilers is now produced by the cogeneration system. Part of the electric power purchased is replaced by power generated by the cogeneration system. - Annual power consumption: 500 MWh/year - Annual city gas consumption: 200,000 Nm ³ /year - Unit calorific value of city gas: 44.8 GJ/1000 Nm ³ - City gas-related carbon emission coefficient: 0.0136 tC/GJ - Annual energy generation: 2,000 MWh/year Use the average CO ₂ emissions coefficient from all power sources at a project site as CO ₂ emissions coefficient for electricity. For instance, when the project site is in the area serviced by a company of similar rating to say a Green Rated Electric Power Company, the emissions coefficient is 0.468 t-CO ₂ /MWh. ("CO ₂ emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry of Green Economy and Environment or ZEMA)). Calculation to be based on most recent CO ₂ emissions coefficient.
Calculation method referenced	"Manual for the Calculation and Reporting of Greenhouse Gas Emissions, Second Edition: Methods to calculate greenhouse gas emissions" (Posted on the official website of the Ministry responsible for the Green Economy and Environment or ZEMA).
Calculation formula	$(2,500 \text{ MWh} \times 0.468 \text{ t-CO}_2/\text{MWh} + 356,000 \text{ Nm}^3 \times 44.8 \text{ GJ}/1000 \text{ Nm}^3 \times 0.0136 \text{ tC}/\text{GJ} \times 44/12) - (500 \text{ MWh} \times 0.468 \text{ t-CO}_2/\text{MWh} + 200,000 \text{ Nm}^3 \times 44.8 \text{ GJ}/1000 \text{ Nm}^3 \times 0.0136 \text{ tC}/\text{GJ} \times 44/12) = 1348.5 \text{ t-CO}_2/\text{year}.$ Reduction in CO ₂ emissions = (annual power consumption before renovation x power drain coefficient + annual city gas consumption before renovation x unit city gas calorific value x city gas carbon emissions coefficient x 44/12) - (annual power consumption after renovation x power drain coefficient + annual city gas consumption after renovation x unit city gas calorific value x city gas carbon emissions coefficient x 44/12). 44/12 is a coefficient to convert the amount of carbon emissions to the amount of CO ₂ Emissions (based on best practice).

<i>7. Cases where the reduction in the BOD load serves as the indicator of environmental benefits from projects to renovate facilities to treat effluent discharged from plants into public water bodies</i>	
Precondition	-Average volume of wastewater discharged per day: 1,000 m ³ /day - Annual average BOD of effluent discharged from effluent treatment facilities: 20 mg/L (before project implementation) → 10 mg/L (after project implementation) - Number of days plants operated per year: 365 days
Calculation method referenced	Environmental Reporting Guidelines by ZEMA (Posted on the official website of the Ministry responsible for the Green Economy and Environment or ZEMA)
Calculation formula	$(20 \text{ mg/L} - 10 \text{ mg/L}) \times 1/1,000,000 \text{ (unit conversion mg} \rightarrow \text{kg)} \times 1,000 \text{ (m}^3\text{/day)} \times 1,000 \text{ (unit conversion m}^3 \rightarrow \text{L)} \times 365 \text{ (days/year)} = 3,650 \text{ kg/year.}$ Reduction in BOD load = (annual average BOD of effluent before the renovation of effluent treatment facilities - annual average BOD of effluent after the renovation of effluent treatment facilities) x average amount of effluent per day x number of days plants operated per year.
<i>8. Cases where the amount of carbon absorbed by trees serves as the indicator of environmental benefits from planting projects</i>	
Precondition	-Target area: 200 ha - Final cutting area per year: 2 ha - Annual amount of growth: 2.9 m ³ /ha/year - Target: Cedar (Magnification coefficient: 1.23, ratio of the above-ground part to the under-ground part: 0.25, bulk density: 0.3140 t/m ³ , carbon content: 0.5) - The land use category before tree planting was agricultural land (general farm land) and the baseline amount of carbon absorbed was 0 t-CO ₂ /year. (refer to the "National Greenhouse Gas Inventory Report, most recent edition" posted on the official website of a National Institute responsible for Environmental Studies or ministry responsible for environment).
Calculation method referenced	"How to view the carbon absorbed by forests: Development of calculation and reporting systems for carbon absorption by forests as required by the Kyoto Protocol" (Posted on the official websites of the Ministries responsible for Agriculture, Forestry and Fisheries and the Forestry and Forest Products Research Institute)
Calculation formula	$[(2.9 \text{ m}^3\text{/ha/year} \times (200-2 \text{ ha})) \times 1.23 \times (1 + 0.25) \times 0.3140 \text{ t/m}^3 \times 0.5] - 0 = 139 \text{ t-C/year}$ [Annual carbon absorbed at a planting site = an increase in trunk volume x magnification coefficient x (1 + ratio of the above-ground part to the under-ground part) x bulk density x carbon content] - annual baseline amount of carbon absorbed. When converting the amount of carbon to the weight of carbon dioxide, multiply the above formula by 44/12.
<i>9. Cases where the reduction in CO₂ emissions serves as the indicator of environmental benefits from cargo transport projects concerning a modal shift from road to rail transport</i>	
Precondition	-Annual total volume of cargo transport: 8,000,000 tkm/year - Basic unit of CO ₂ emissions for cargo vehicles: 0.211 kg-CO ₂ /tkm - Basic unit of CO ₂ emissions for freight railways: 0.025 kg-CO ₂ /tkm (Posted on the official website of the Ministries responsible for Land, Infrastructure, Transport and Tourism)
Calculation method referenced	"Joint guidelines on methods for calculating carbon dioxide emissions in the logistics sector" (Posted on the official websites of the Ministries responsible for the Economy, Trade and Industry, Land, Infrastructure, Transport and Tourism).
Calculation formula	$8,000,000 \text{ tkm/year} \times (0.211 \text{ kg-CO}_2\text{/tkm} - 0.025 \text{ kg-CO}_2\text{/tkm}) \times 1/1,000 \text{ (unit conversion kg} \rightarrow \text{t)} = 1,488 \text{ t-CO}_2\text{/year.}$ CO ₂ emission reduction = Annual total volume of cargo transport x (basic unit of CO ₂ emissions for cargo vehicles - basic unit of CO ₂ emissions for freight railways)
<i>10. Cases where the reduction in CO₂ emissions by electric cars compared to gasoline cars serves as the indicator of environmental benefits from projects to offer loans to new purchasers of electric cars</i>	
Precondition	(a) Number of cars targeted for loans: 1,000 (b) Average fuel economy of gasoline cars: 21.8 km/L (Posted on the official website of the Ministries responsible for Land, Infrastructure, Transport and Tourism) (c) Annual average mileage of gasoline cars (private cars): 10,000 km/year (Posted on the official website of the Ministries responsible for Land, Infrastructure, Transport and Tourism) (d) Unit calorific value of gasoline: 34.6 MJ/L - Gasoline-related carbon emission coefficient: 0.0183 kg - C/MJ ("Manual for the Calculation and Reporting of Greenhouse Gas Emissions (ver. 4.2), Second Edition: Methods to calculate greenhouse gas emissions" Posted on the official website of the Ministry responsible for the Green Economy and Environment). (e) Electric power consumption by electric cars to be introduced: 6 km/kWh. Use the average CO ₂ emissions coefficient from all power sources at a project site as an electricity-related CO ₂ emissions coefficient. For instance, when the project site is in the area

	serviced by a Green rated/certified Electric Power Company, the emissions coefficient is 0.468 t-CO ₂ /MWh. ("CO ₂ emissions coefficients by power companies-FY2022 Results-" (Posted on the official website of the Ministry of Green Economy and Environment). Calculation to be based on the most recent CO ₂ emissions coefficient.
Calculation method referenced	"Joint guidelines on methods for calculating carbon dioxide emissions in the logistics sector" (Posted on the official websites of the Ministries responsible for Economy, Trade and Industry, Land, Infrastructure, Transport and Tourism)
Calculation formula	$\{(1,000 \text{ vehicles} \times 10,000 \text{ km/year}) / 21.8 \text{ km/L}\} \times 34.6 \text{ MJ/L} \times 0.0183 \text{ kg - C/MJ} \times 44/12 \times (1/1,000 \text{ (unit conversion kg} \rightarrow \text{t)}) - \{(1,000 \text{ unit} \times 10,000 \text{ km/year}) / 6 \text{ km/kWh}\} \times 0.468 \text{ t-CO}_2/\text{MWh} \times (1/1,000 \text{ (unit conversion MWh} \rightarrow \text{kWh)}) = 285 \text{ t-CO}_2/\text{year}.$ Reduction in CO ₂ emissions = (((number of cars targeted for loans x annual average mileage (km/year)) ÷ fuel economy of gasoline cars) x unit calorific value of gasoline x gasoline carbon emission coefficient x 44/12) - ((number of cars targeted for loans x annual average mileage (km/year)) ÷ electric power consumption of electric cars x electricity-related CO ₂ emissions coefficient). *44/12 is a coefficient to convert the amount of carbon emissions to the amount of CO ₂ emissions.
<i>11. Cases where a decrease in the estimated wetted surface area and estimated number of affected houses are used as indicators of environmental benefits from projects to construct discharge channels to control submergence in the event of river flooding, which are conducted as part of a climate change adaptation project</i>	
Precondition	(a) Estimated wetted surface area: about 100 ha (before construction) → about 25 ha (after construction) (b) Estimated number of affected houses: about 500 houses (before construction) → about 95 houses (after construction)
Calculation method referenced	None. * Refer to the following for the mapping method of assumed flood prone areas "Preparation Manual of the National Flooded Areas" (Posted on the official website of the DMMU) "Preparation Manual of the Expected Flooding of Small and Medium Rivers" (Posted on the official website of the DMMU and Ministry responsible for Environment)
Calculation formula	A decrease in flooded area = estimated wetted surface area before construction - estimated wetted surface area after construction = about 100 ha - about 25 ha = about 75 ha. Estimated decrease in the number of affected houses = estimated number of affected houses before construction - estimated number of affected houses after construction = about 500 houses - about 95 houses = about 405 houses
<i>12. Cases where the reduction in CO₂ emissions per ton of products serves as the indicator of environmental benefits from projects to enhance energy efficiency of the manufacturing process in plants</i>	
Precondition	- Annual product production volume: 15,000 t/year Use the average CO ₂ emissions coefficient from all power sources at a project site as an electricity-related CO ₂ emissions coefficient. For instance, when the project site is in the area serviced by a Green rated / Electric Power company, the emissions coefficient is 0.643t-CO ₂ /MWh. ("CO ₂) emissions coefficients by power companies-FY20xx Results-" (Posted on the official website of the Ministry responsible for green economy and environment)) *Calculation to be based on most recent CO ₂ emissions coefficient. - Annual power consumption: 5,000 MWh/year (before renovation) → 4,000 MWh/year (after renovation). - Annual A-type heavy oil consumption: 800 kL/year (before renovation) → 600kL/year (after renovation). - Unit calorific value of A-type heavy oil: 39.1 GJ/kL A-type heavy oil-related carbon emission coefficient: 0.0189 tC/GJ.
Calculation method referenced	"Manual for the Calculation and Reporting of Greenhouse Gas Emissions, Recent Edition: Methods to calculate greenhouse gas emissions" (Posted on the official website of the Ministry responsible for the Green Economy and Environment).
Calculation formula	$*((5,000\text{MWh}) \times (0.643\text{t} - (\text{CO}_2/\text{MWh})) + (800\text{kL}) \times (39.1\text{GJ/kL}) \times (0.0189\text{tC/GJ}) \times (44/12)/15,000\text{t}) - (4,000\text{MWh} \times 0.643\text{t-CO}_2/\text{MWh} + 600\text{kL} \times 39.1\text{GJ/kL} \times 0.0189\text{tC/GJ} \times 44/12)/15,000\text{t} = 0.08\text{t-CO}_2/\text{t}$ Amount of basic unit reduced (reduction in CO ₂ emissions per ton of products) = (annual power consumption before renovation x power drain coefficient + annual A-type heavy oil consumption before renovation x unit calorific value of A-type heavy oil x A-type heavy oil related carbon emission coefficient x 44/12) ÷ annual product production volume - (annual power consumption after renovation x power drain coefficient + annual A-type heavy oil consumption after renovation x unit calorific value of A-type heavy oil x A-type heavy oil-related carbon emission coefficient x 44/12) ÷ annual product production volume. *44/12 is a coefficient to convert the amount of carbon emissions to the amount of CO ₂ Emissions (based on best standards).

<i>13. Cases where a reduction in the amount of plastics used serves as the indicator of environmental benefits from projects to introduce equipment to produce packaging materials with fewer plastics at packaging manufacturing plants</i>	
Precondition	- Amount of plastics used per packaging material (unit index that is 100% before introduction): 100% (before introduction) → 60% (after introduction) - The current amount of plastics used to produce 100,000 packaging materials (before introduction): 5 tons
Calculation method referenced	None
Calculation formula	A reduction in the amount of plastics used to produce 100,000 packaging materials = 5 tons x (100% - 60%) = 2 tons
<i>14. Cases where the absorption amount of greenhouse gases as a result of greening serves as the indicator for environmental benefits from projects for absorption by urban greening</i>	
Precondition	- To account for the absorption amount of greenhouse gases by the greening of the project site (planting of tall trees)
Calculation method referenced	The standard 'Low Carbon City Planning Practical Handbook (Resources)' (Ministry of Green economy and Environment) to provide a manual or handbook.
Calculation Formula	CO ₂ absorption (t-CO ₂ /year) = 0.0385 (t-CO ₂ /per tree per year) x number of tall trees (trees) (if no. of trees is known within a project site) CO ₂ absorption (t-CO ₂ /year) = 0.0359 (t-CO ₂ /per tree per year) x number of tall trees (trees) If the number of tall trees are unknown within the project site, calculation based on area is also possible as an alternative. Refer to the standard on 'Low Carbon City Planning Practical Handbook (Resources)'.

Source: Ministry of the Environment, Japan (2020). "Green Loan and Sustainability Linked Loan Guidelines 2020", Annex 5, page 83

SCHEDULE 6:

EXAMPLES OF SUSTAINABILITY PERFORMANCE TARGETS

The following is not an exhaustive list and only shows some of the examples

<i>Category</i>	<i>Case</i>
Energy Efficiency	- Improvements in the energy efficiency rating of buildings and/or machinery owned or leased by the borrower - Annual amount of energy saving (electric power MWh/GWh, other energies GJ/TJ) - Annual reduction of greenhouse gas emissions/contribution to reduction (amount in CO₂ equivalent)
Greenhouse gas emission	- Reductions in greenhouse gas emissions in relation to products manufactured or sold by the borrower or to the production or manufacturing cycle - Reduction not only of the amount of greenhouse gases emitted by the company itself but also reduction of the total amount of greenhouse gases emitted in the entire supply chain from the upstream through downstream of its business activities (total of Scope 1 (amount emitted directly from the plants, offices, vehicles, etc. of the company), Scope 2 (amount emitted indirectly from the electricity and other energy consumed by the company) and Scope 3 (amount of other indirect emission))
Renewable energy	-Increases in the amount of renewable energy generated or used by the borrower
Water consumption	- Water savings made by the borrower - Improvement of water recycle rate of the borrower
Wastewater treatment	- Amount of wastewater treated or reused by the borrower
Safe and inexpensive housing for low-income earners	- Increases in the number of affordable housing units developed by the borrower and in the number of residents in those housing units
Sustainable sourcing	- Increases in the use of certified sustainable raw materials/supplies
Circular Economy	- Increase or decrease in amount of input of natural resources - Recycling rates in waste disposal facilities - Use of recycled materials and renewable resources, etc. with impact to reduce environmental loading - Shift to products with effect to enhance reduction of wastes
Sustainable agriculture/food	- Improvements in production or sourcing of sustainable products and/or quality products using appropriate labels or certifications - Increase in the products concerning which the traceability regarding sustainability has been established
Biodiversity	- Improvement of conservation and protection of biodiversity and ecosystem (increase in land areas of tree planting or reforestation, increase in sustainable forest area certified by competent institutions/bodies, etc., increase in sourcing of marine products certified by competent bodies, etc., increase in the sales of products and services that contribute to preservation of biodiversity)
Adaptation to climate change	- Expansion of areas of agricultural land converted from desert or devastated land - Increase in the number of people who receive benefits of the measures to mitigate the influence of flood or drought as a result of the development of the borrower
Global ESG assessment	- Improvements in the borrower's ESG rating or achievement of a recognized ESG certification

Source: Ministry of the Environment, Japan (2020). "Green Loan and Sustainability Linked Loan Guidelines 2020", Annex 6, page 89

SCHEDULE 7:

REVIEW PROCESS

1. General matters related to External Reviews**(1) General information**

A financial service provider shall ensure that:

- (a) Borrowers utilize an external review if they need an objective assessment of the alignment of their approaches with the framework for green loan procurement.
- (b) It accepts external reviews and acknowledges the existence of many different names such as “second party opinion,” “verification,” “certification,” and “rating.”

(c) Reviews mentioned in (b), are useful in the following cases, including:

- (i) Cases where the green projects designated for a green loan include those that have negative environmental effects in addition to environmental benefits.
Cases where an issuer seeks an objective evaluation of the appropriateness in allocating proceeds to such projects.
- (ii) Cases where a borrower needs an objective external evaluation of the appropriateness of the determination criteria or the appropriateness of the criteria-based determination of green projects since no such expertise exists within the borrower's organization.
- (iii) Cases where an issuer requires an objective evaluation of the appropriateness of the environmental benefit calculation method developed by the issuer since the green projects to which the proceeds will be allocated are relatively unique and therefore, there is no existing framework for calculating the environmental benefits of the projects.
- (iv) Cases where a borrower needs to promote an understanding of green loans among selected overseas regulated entities who are unfamiliar with green projects and their associated information in selected jurisdictions.
- (v) Cases where an external review of the entire framework of a green loan was conducted in the past and where an issuer plans to procure a new green loan with the same framework, it is considered that the borrower does not have to conduct an external review again.

(2) Cases of aspects that can be Externally Reviewed

A financial service provider shall ensure that the following possible cases of green loans aspects can be externally reviewed:

- (i) Reviewing ahead of green loans fund procurement should include:
 - (a) The evaluation of the appropriateness of green projects to which the proceeds will be allocated;
 - (b) The evaluation of the appropriateness of the determination criteria and the appropriateness of the criteria-based determination process;
 - (c) The evaluation of the appropriateness of specific methods to track and manage the proceeds from green loans;
 - (d) The evaluation of the appropriateness of the expected environmental benefits, or actual environmental benefits in the case of refinancing, of green projects including the appropriateness of the methods for calculating environmental benefits and preconditions for the calculation.
- (ii) Reviews following fund procurement with green loans should include:
 - (a) The evaluation of whether the management of the green loan proceeds and the allocation of the proceeds to green projects were executed properly by using the methods specified by the borrower before the issuance of the Green Loans.
 - (b) The evaluation of whether the green projects to which the green loan proceeds were allocated have actual environmental benefits and if they were calculated properly by using the methods specified by the borrower before the issuance of green loans.

(1) Reporting and Disclosure of review results by borrowers

A financial service provider shall ensure for borrowers whose green loans are externally reviewed that they:

- (i) Report the documents showing the review results.
- (ii) Disclose the external review result or summary of the review result on a website, regulated entity's website, after giving considerations to duty of confidentiality and competitiveness.

1. Criteria to be followed by External Review Providers

A financial service provider shall ensure that external reviewers follow the basic criteria below when giving reviews to borrowers:

(1) Ethical standards as professionals should include;

- (i) Integrity - External review providers must consistently act with integrity and must not get involved in the preparation and disclosure of reviews based on any reports or information that they recognize as falling into the following:
 - (a) Information that contains materially false or misleading statements
 - (b) Information that contains statements or information that was prepared without due caution required in the performance of duties
 - (c) When omission or obfuscation of necessary information causes misunderstanding, and
 - (d) information that omits or obfuscates such information.

(2) Fairness of external reviews should include:

- (i) External review providers should desist from preconception, avoid conflicts of interests, defy unfair influence of others and consistently maintain a fair standpoint.
- (ii) If external review providers are required to distort facts or bias a review to justify the predetermined conclusion, they should decline from providing a review as professionals.
- (iii) Maintaining a fair standpoint means requiring to ensure objectivity in the judgment of business operations.
- (iv) External review providers should be independent from the borrower and should ensure impartiality.
- (v) External review providers' impartiality should be judged based on personal or capital relationships.

(3) External Reviews that are not independent

A financial service provider shall not consider an external review to be independent in the following cases:

- (i) Cases where a borrower and an external review provider are subsidiaries of the same parent company;
- (ii) Cases where a borrower is the parent company of an external review provider (subsidiary);
- (iii) Personal Relationships including cases where a board member or one in a similar position of one company (borrower) also serves as a board member of the other company (external reviewer).
- (iv) A board member or one in a similar position could include the representative director, auditor, executive, and or one in any other position with legal authority over the execution and or the auditing of operation and finances under corporate law, civil law, and or any other relevant law, regardless of title.

(4) Abilities and due care as professionals

A regulated entity shall ensure that external review providers exhibit abilities and due care as follows:

- (i) External review providers need to maintain the level of abilities necessary to perform their duties as professionals when providing an external review in order to provide an appropriate external review.
- (ii) External review providers should observe what is required of them as professionals and perform their duties with due care. External review providers should confirm that any party that works under their instructions is receiving appropriate training and supervision when performing their duties.
- (iii) External review providers are required to satisfy the following in respect of their specialist knowledge as professionals.
 - (a) Constantly keep up with and understand relevant knowledge including international market trends and the latest trends in professional practices in their specialist areas, always endeavour to improve their skills, and be equipped with the latest specialist knowledge.
 - (b) Have the relevant specialist knowledge depending on the type of external reviews they provide and the type of Green Projects for which they provide a review.
 - (c) Employ or invite other specialists in the areas where they do not have sufficient expertise. It is not necessary for one external review provider to evaluate all the aspects of a Green Loan. It is considered that more than one external review providers can review different aspects based on the expertise of each provider.

(1) Expertise of external review providers

A financial service provider shall consider the following expertise of an external review provider:

- (i) When reviewing the appropriateness of the Green Projects to which proceeds will be allocated, the appropriateness of the evaluation and selection process of the Green Projects and the appropriateness of environmental benefits, expertise such as the criteria to determine whether any environmental benefit exist, indicators to be referred to when verifying the method to quantify environmental benefits, environmental evaluation, and environmental certification shall be required; and
- (ii) When reviewing the appropriateness of the management and allocation of proceeds and so on, expertise in financial and accounting audits shall be a requirement.

(2) Duty of confidentiality

- (i) External review providers must not disclose to others or use for the benefit of themselves or third parties any information that has come into their possession in the course of their duties without any justifiable reason.
- (ii) With respect to their compliance with the duty of confidentiality, external review providers should establish, publish or provide their customers with a policy, including the structure concerning the protection of customer information.
- (iii) Actions as professionals External review providers should be aware of their position as professionals and satisfy what is required of them as professionals and should not take any action that will harm the credibility of or bring disrepute to external review providers in general.

1. Requirements of external review providers as an organization

A financial service provider shall ensure that external review providers meet the following:

- (1) External review providers should have a sufficient organization structure to appropriately undertake external reviews and should have predetermined methodologies and procedures to conduct external reviews in place as well as an organizational structure to perform external reviews.
- (2) External review providers should hire a reasonable number of people who have professional experience and qualifications necessary to cover the areas subject to the external reviews to be performed.
- (3) When using liability insurance concerning specialist areas, external review providers should refer to the scope of coverage of such insurance.

2. Matters that Should be Evaluated by External Review Providers

A regulated entity shall be responsible for ensuring that external reviewers evaluate the following content dependent on the type of external review:

- (1) External review providers shall evaluate the intended environmental benefits of the Green Project for which the funds are to be used;
- (2) External review providers shall make an evaluation based on the confirmation of the consistency with the four elements expected of Green Loans; and
- (3) External review providers shall, as needed, evaluate potential material environmental risks, such as negative impacts of the Green Project specified by the borrower.

3. Information That Should Be Included In Documents Concerning External Review Results

A financial service provider shall ensure that the following is adhered to:

- (1) External review providers should include a general description of the purpose of an external review, scope of the review, qualifications of persons who conduct the external review and expertise as external review providers. At least, they need to show where such information is available.

External review providers should clearly demonstrate their expertise in documents as well as those concerning review results by including statements such as the following: "Our company has offered environmental evaluation services for about XX years and has solid expertise in this field."

- (1) External review providers should include in the documents as well as concerning their review results a statement on their independence from the borrower and their policy on conflicts of interest. At least, they need to show where such information is available.
- (2) There shall exist various types of external reviews, which could have the same name, but what they evaluate or the criteria they use for evaluation may differ.
- (3) The contents of reviews should be made easier for review users to understand them, and therefore external review providers should clearly explain in the documents concerning their review results, the definitions they used, their analytical approach and methodologies used to include the evaluation criteria applied to respective items.
- (4) External reviews shall include a conclusion and output including marginal items evaluated in external reviews. At least, they need to show where such information is available.

1. Review Process

A financial service provider shall ensure that a review process includes the evaluation of the following aspects of a Green Loan:

(1) Review ahead of funds procurement with Green Loans shall include the following aspects.

- (i) The evaluation of the appropriateness of Green Projects to which the proceeds will be allocated.
- (ii) The evaluation of the appropriateness of the determination criteria and the appropriateness of the criteria-based determination process.
- (iii) The evaluation of the appropriateness of specific methods to track and manage the proceeds from Green Loans.
- (iv) The evaluation of the appropriateness of the expected environmental benefits of Green Projects (including the appropriateness of the methods for calculating environmental benefits and preconditions for the calculation).

(2) Review following funds procurement with Green Loans

- (i) The evaluation of whether the management of the Green Loan proceeds and the allocation of the proceeds to Green Projects were executed properly by using the methods specified by the borrower before the issuance of the Green Loans.
- (ii) The evaluation of whether the Green Projects to which the Green Loan proceeds were allocated have actual environmental benefits and if they were calculated properly by using the methods specified by the borrower before the issuance of Green Loans.

(3) General matters related to internal reviews.

(i) Self-certification

Given that loans traditionally are transactions driven by the relationship between the borrower and lender and therefore financial service providers are likely to have a broad working knowledge of the borrower and its activities, self-certification by a borrower, which has developed and demonstrated the internal expertise to confirm alignment of the Green Loan with the matters described in the above Part V, section 11, may be sufficient.

Possible examples of the development of internal expertise and demonstration of effectiveness of confirmation are not limited to the following:

- (i) At the borrower, a department that has expertise and is independent from the department responsible for projects shall be responsible to perform assessments, and
- (ii) If the department responsible for projects performs assessment for itself, it does so based on the criteria and assessment method set beforehand and has a department independent from the department responsible for projects confirm its validity.
- (iii) Prior provision of information regarding self-certification to financial service providers;

- (a) If the borrower performs self-certification, it should inform the regulated entities in advance and explain with sufficient transparency its internal expertise upon formulation of the self-certification process pertaining to the green loan framework.

(a) Borrowers are recommended to document their internal expertise. This documentation should be communicated to the financial service provider on request. The self-certification results should also be reported to the financial service provider on request.

(i) General disclosure

- (a) When appropriate, and taking into account confidentiality and competitive considerations, borrowers should make publicly available, via their website or otherwise, their decision to review the Green Loan based on self-certification as well as the parameters based on which they assess Green Projects and the internal expertise they have to assess such parameters.
- (b) For a borrower to gain public approval by expressing that the procured loans are Green Loans, they need to ensure transparency.
- (c) In order to gain public approval, a borrower should make the self-certification results publicly available via their website or otherwise.

Gazette Notice No. 1327 of 2023 [0895474]

The Securities Act
(No. 41 of 2016)

Amnesty Notice For Unlicensed Capital Market Players

TAKE NOTICE that pursuant to section 4 (2) of the Securities Act No. 41 of 2016 as amended by Act No.21 of 2022 (hereinafter referred to as the "Securities Act") the Securities and Exchange Commission (hereinafter referred to as the "Commission") hereby exempts any natural or legal person operating in the Capital Markets without a licence from the operation of the Securities Act which make it an offence for such persons to operate in the Capital Markets without a Commission issued licence.

Further take note that the said persons include but are not limited to the following:

1. Individuals working as representatives of licensed Dealers and Investment Advisers required to be licensed pursuant to Section 34 (2) of the Securities Act;
2. Companies dealing in registered securities or conducting securities business for which a Dealer's license is required pursuant to Section 32 of the Securities Act;
3. Persons offering Investment advice for which an Investment Adviser's license is required pursuant to Section of the 33 Securities Act;
4. Persons or individuals operating or marketing private funds or any other investment vehicles for which a Dealer's or Investment Advisers License is required pursuant to Sections 32 and 33 of the Securities Act;
5. Persons operating as share transfer agents requiring a Transfer Agent's License pursuant to Section 34(1) of the Securities Act; and
6. Persons offering credit rating agency services in Zambia for which a Credit Rating Agency license is required pursuant to Section 48 of the Securities Act.

Furthermore, the Commission shall not take any enforcement action or impose any administrative penalties against such unlicensed market players on the condition that they apply for the requisite Commission issued licences on or before **31st December 2023**, after which the Commission reserves the right to take regulatory action as prescribed by the Securities Act.

Please do not hesitate to contact the Commission for any clarification on this matter, on the following contact details: Telephone: +260 211 227 012/ 222 368/ 222 369, Email: info@seczambia.org.zm.

Dated this 6th day of October 2023.

P. K. CHITALU,
Chief Executive Officer
Securities and Exchange Commission

LUSAKA

GAZETTE NOTICE No. 1350 OF 2023 [5851719]

The Marriage Act
(Volume V, Cap. 50 of the Laws of Zambia)

Licensing of a Place for Public Worship

IT IS NOTIFIED for public information that in exercise of powers conferred upon the Council Secretary of Kafue Town Council under section 5(1) of the Marriage Act, Cap. 50 of the Laws of Zambia, the place named in the Schedule set out hereto is appointed as a Place for Public Worship.

P.O. Box 360021
KAFUE

B. MUTANYA,
Council Secretary

SCHEDULE

Name	Place
Kafue Reformed Baptist Church	Kafue

GAZETTE NOTICE No. 1351 OF 2023 [1115895]

The Marriage Act
(Laws, Volume V, Cap. 50)

Appointment of Person to Solemnise Marriages

IT IS NOTIFIED for public information that in exercise of the powers conferred upon the Town Clerk/Council Secretary Lusaka District by Section 5(2) of the Marriage Act Cap. 50 of the Laws of Zambia, the person named in the Schedule set out hereto is appointed to Solemnise Marriages in the Republic of Zambia.

P.O. Box 23
MAMBWE

J. A. K. MWANZA,
Council Secretary

SCHEDULE

Name	Church
Pastor Simon Shabukali	Wooldlands Conference of Seventh-day Adverists P.O. Box 31411, Lusaka

GAZETTE NOTICE No. 1352 OF 2023 [0889945]

The Companies Act
(No.10 of 2017)

Notice Under Section 318

NOTICE IS HEREBY GIVEN that at the expiration of a period of three months after the publication of this notice, Bearing King Zambia Limited, Company Registration No. 120220031533, incorporated in Zambia on 19th day of April, 2022 and having its place of business at Sub E of Sub 5 of Sub L of Farm 2037, Mungwi Road, Lusaka, Lusaka Province, Zambia, will be struck-off the Register of Companies pursuant to Section 318 of the Companies Act No. 10 of 2017 of the Laws of Zambia unless due cause is shown to the contrary.

P.O. Box 32020
LUSAKA
12th September, 2023

S. ZIMBA,
Deputy Registrar,
for/Registrar,
Patents and Companies
Registration Agency