



Sustainable Financing Framework

Bangkok Expressway and Metro Plc. (“BEM”)



February 2022



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Section 1 Introduction to BEM

1.1) Company Overview

Bangkok Expressway and Metro Public Company Limited (“BEM”) is a leading transportation service provider, consisting of expressway and metro system services, including commercial development related to the expressway and metro systems. With its commitment to management based on corporate governance and corporate social and environmental responsibility, the Company has been then trusted by the government sector in implementing large-scale transportation projects to uplift the quality of urban life and make expansion to the surrounding provinces as well as to the Asian region in the future.



Expressway Business

- The Si Rat Expressway (38.5 kilometers):
 - Rama9 – Ratchadapisek
 - Phayathai – Bangkhlo
 - Ratchadapisek – Chaeng Watthana
 - Rama 9 – Srinagarindra
- The Si Rat – Outer Ring Road Expressway (17 kilometers)
- The Udon Rattthaya Expressway (32 kilometers)



Rail Business (Mass Rapid Transit - MRT)

- The MRT Blue Line (48 kilometers/ 38 stations):
 - Hua Lamphong – Bang Sue
 - Hua Lamphong – Bang Khae
 - Bang Sue – Tha Phra
- The MRT Purple Line (23 kilometers/ 16 stations):
 - Bang Yai – Bang Sue



Commercial Development Business

- The commercial development business of Expressway Project and MRT Blue Line Project i.e. advertising media, lease of retail spaces and provide services and maintenances of telecommunications system equipment.

Source: BEM’s website as of February 2022

With its social mission to provide the transport service with convenience, rapidity, and safety by engaging in the business with its commitment to social and environmental responsibility, attainment of value added creation and optimum benefits for all stakeholders with fairness and sustainability, and, to enable the Company to create the **“Path to Happiness for Better Travelling Mode”**.

It is a cornerstone of BEM’s business to be a responsible member of the society. The Company uses its reach to increase awareness of sustainable investment and financing alternatives to facilitate the transformation towards a low carbon and resilient economy.

Note that this Framework is the updated version of BEM’s Sustainable Financing Framework, published March 2021.



1.2) BEM's Sustainability Policy

The Company is committed to operating its businesses with particular emphasis on the society and environment in pursuit of the Company's sustainable business growth. As such, the Company focuses on transparency and fairness in its operations with the aim of coordinating benefits and growing together with all groups of stakeholders. Therefore, the Company adopts and communicates its operating policy for sustainable development to all staff to ensure that they seriously implement and harmoniously incorporate it into their own work processes for sustainable growth of the Company and all its groups of stakeholders, as follows:

1. To be a leading organization for sustainable development through communication and exchange of best practices with all groups of the Company's stakeholders;
2. To build up the culture and concept of the sustainable development for incorporation into every work process and decision-making process of the Company;
3. To promote training, learning, and counseling, focusing on practices according to sustainable development guidelines;
4. To support the operations, disseminate the guidelines, and to ensure collaboration at the regional level as well as transferring the body of knowledge to achieve sustainable development on a continuous basis.

The Company formulates a clear policy which prioritizes and realizes rights of stakeholders of all groups, whether internal stakeholders, namely, executives, staff of the Company and its subsidiaries, including shareholders, or external stakeholders, namely, customers, business counterparts, lenders, traders, competitors, society, communities, schools nearby the right of way of the expressways and metro routes, together with the government sector and other relevant authorities, as well as being committed to playing a part in environmental conservation by means of relentless improvement of services in all aspects.

Furthermore, the Company has an investment policy which shall be not to invest in any project giving rise to environmental impact or contrary to the good morals of the society. With the commitment to the eco-friendly business operations to ensure the good quality of life to its staff, service users, including societies along the expressway and the MRT routes, together with stakeholders of all groups, the Company has improved and reviewed its internal procedures to conform to the environmental requirements. The guidelines followed by the Company for Economy, Society and Environmental Management and aligned with UN SDGs are as follows:

BEM's ESG Commitments

- 

To give priority to pollution prevention and control by managing and maintaining the expressways and the MRT to meet international standards and keeping in mind the environmental impact on service users, staff, and communities
- 

To instill and encourage our staff with an awareness of efficient use of energy and natural resources i.e. wastewater treatment system
- 

To comply with the environment-related laws and regulations
- 

To review the purposes and goals for continued improvement of the environmental management system
- 

To communicate the environmental policy to the public and all parties concerned via the Company's website, Annual Report, bulletin boards, and written notices to contractors for ensuring their practices in the same direction
- 

To pay attention in relation to the potential environmental impact from the MRT services on the environment, quality of life, and lives of people and nearby communities, by strictly monitoring, preventing and mitigating the environmental impact
- 

To ensure that the supply chain of traders in business association with the Company takes account of environmental impact, in the interests of the sustainability of their mutual business alliance in strictly compliance with international standards, ISO 9001 Quality Management System, and ISO 14001 Environment Management System.
- 

To adopt the green procurement policy by having criteria for selection of eco-friendly goods with a minimal environmental impact in the procurement procedures and ensure goods or services in the List of Thai Green Products of the Thailand Environment Institute or any other overseas agencies of similar nature.
- 

To educate youth via various learning activities, together with distribution of scholarships to underprivileged children and youth as their cost for having sustainable career
- 

To treat all staff equally, without discrimination in terms of employment, remuneration, training, promotion, termination or dismissal due to gender, race, color, religion, age, marital status, pregnancy, political opinion, or disability, etc. Additionally, to allow all staff to enjoy equal rights for work pursuant to rules, regulations, notifications and orders of the Company.

Contribution to UN SDGs



The image displays a vertical column of 13 icons representing the UN Sustainable Development Goals (SDGs). Each icon is a colored square with a white symbol and text. The goals shown are: 3. Good Health and Well-being (green), 4. Quality Education (red), 5. Gender Equality (red), 6. Clean Water and Sanitation (blue), 7. Affordable and Clean Energy (yellow), 8. Decent Work and Economic Growth (maroon), 9. Industry, Innovation and Infrastructure (orange), 11. Sustainable Cities and Communities (orange), 12. Responsible Consumption and Production (brown), 13. Climate Action (green), and the Sustainable Development Goals logo at the bottom.



1.3) BEM's ESG Awards and Recognitions

With the Company's aspiration to deliver the sustainable value creation for all our stakeholders, the Company had been recognized and obtained awards which acknowledged the intention to alleviate the quality of life i.e. traffic problems in order to deliver the good and efficient services with convenience, rapidity and safety to the expressway users and the MRT passengers.



Green Office Award 2020

The award from the Ministry of Natural Resources and Environment to recognize BEM's efficiency energy and resources management.



Thailand Sustainability Investment 2021

(5th Consecutive Year)

As being a listed company who taking into account the environment, society and corporate governance in its business operations.



Excellent CG Scoring 2021

The Company received an "Excellent" rating from Corporate Governance Report of Thai Listed Companies 2021 published by the Thai Institute of Directors Association (IOD).



Thailand's Top Corporate Brands 2021

(2nd Consecutive Year)

With a corporate brand value of 101,866 million baht, highest in transport and logistic sector in ASEAN and Thailand's Top Corporate Brands 2021.

Section 2 Sustainable Financing Framework

To demonstrate BEM's commitment in sustainable businesses, following its sustainability strategy, the Company establishes this Framework as the guideline of conducting businesses and fund raising in relation to ESG activities.

This Sustainable Financing Framework ('the Framework') is developed in alignment with the following guidelines:

- the Green Bond Principles ("GBP"), Social Bond Principles ("SBP") and Sustainability Bond Guidelines ("SBG") issued by the International Capital Market Association (ICMA) in June 2021⁷;
- the ASEAN Green Bond Standards ("GBS"), ASEAN Social Bond Standards ("SBS") and ASEAN Sustainability Bond Standards ("SUS"), issued by the ASEAN Capital Markets Forum (ACMF) in October 2018⁸ and;
- the Green Loan Principles ("GLP") issued by the Loan Market Association (LMA) in February 2021⁹ and Social Loan Principles("SLP") issued by the Loan Market Association (LMA) in April 2021¹⁰

Following the above guidelines, BEM's Sustainable Financing Framework sets the basis to cover four key pillars:

1. Use of proceeds
2. Process for project evaluation and selection
3. Management of Proceeds
4. Reporting

This Sustainable Financing Framework is based on the Green and Social Bond Principles, Sustainability Bond Guidelines and Green Loan Principles published by the International Capital Markets Association ("ICMA"). The Sustainable Financing Framework may be further updated and expanded as and when the principles are released.

2.1) Use of Proceeds

The amount equal to net proceeds of BEM's sustainable financing instruments issued will be used to finance or refinance new and/or existing Eligible Projects/Assets (as defined in section 2.1.1 Eligible Green Categories and 2.1.2 Eligible Social Categories below) which have been evaluated and selected by Sustainable Finance Working Group. The net proceeds may include new and/or existing projects with disbursements after the issuance of the sustainable financing instruments within 30 months and/or 30 months preceding the issuance date of the respective instruments.

⁷ In alignment with ICMA Green Bond Principles, June 2021, <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>; ICMA Social Bond Principles, June 2021 <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/social-bond-principles-sbp/> and ICMA Sustainability Bond Guidelines <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/sustainability-bond-guidelines-sbg/>

⁸ In alignment with ACMF Green Bond Standards, October 2018, <https://www.theacmf.org/initiatives/sustainable-finance/asean-green-bond-standards>, ACMF Social Bond Standards, October 2018, <https://www.theacmf.org/initiatives/sustainable-finance/asean-social-bond-standards> and ACMF Sustainability Bond Standards, October 2018, <https://www.theacmf.org/initiatives/sustainable-finance/asean-sustainability-bond-standards>. The ASEAN GBS, SBS and SUS are intended to provide additional guidance on the application of the ICMA GBP, SBP and SBG, as well as to enhance transparency, consistency and uniformity of ASEAN Green, Social and Sustainability Bonds

⁹ In alignment with LMA Green Loan Principles, Feb 2021, <https://www.lsta.org/content/green-loan-principles/>

¹⁰ In alignment with LMA Social Loan Principles, Apr 2021, <https://www.lsta.org/content/social-loan-principles-slp/>

2.1.1) Eligible Green Categories

Eligible Green Categories	Eligible Projects/Assets Description	Environmental Benefits	Alignment with ASEAN SUS and ICMA SBG / UN SDGs
<p>Clean Transportation</p>	<ul style="list-style-type: none"> - Projects/investments towards clean transportation development, construction operation and maintenance including but not limited to improvement and expansion of electric vehicle/train, metro networks, related systems, stations, facilities, utilities and other infrastructure for passenger or freight transportation including environmental impact mitigation measures and monitoring program (EMP) 	<ul style="list-style-type: none"> - Reduction of greenhouse gas (GHG) and other pollutants - Provide access to safe, affordable, accessible and sustainable transport systems for all - Improve road safety, notably by expanding public transport 	<p>Sustainable cities and communities / Climate Action</p>  
<p>Energy Efficiency</p>	<ul style="list-style-type: none"> - Installation of systems, products, technologies that reduce energy consumption or improve efficiency or mitigate greenhouse gas emission in tollway and railway construction and operation including energy performance monitoring system - Deployment of new and energy-efficient trains or light rail vehicles - Installation, maintenance or replacement of energy efficient heating, air-conditioning, cooling, lighting and electrical equipment such as light emitting diodes (LEDs), solar cell, sensor systems, platform screen doors, air or water cooled chillers 	<ul style="list-style-type: none"> - Minimize over energy consumption, therefore, reduce emissions associated with energy usage and lower greenhouse gas (GHG) emissions and other pollutants 	<p>Affordable and Clean Energy</p> 
<p>Renewable Energy</p>	<ul style="list-style-type: none"> - Investments/expenditures that support the development, installation, operation and maintenance in connection of renewable energy i.e. solar roof 	<ul style="list-style-type: none"> - Reduce in overall energy consumption and lower greenhouse gas (GHG) emissions 	<p>Affordable and Clean Energy</p> 

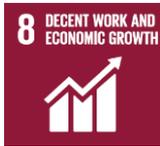


Eligible Green Categories	Eligible Projects/Assets Description	Environmental Benefits	Alignment with ASEAN SUS and ICMA SBG / UN SDGs
Water Management	<ul style="list-style-type: none"> - Improvement in water management including water treatment and recycling of water 	<ul style="list-style-type: none"> - Improve wastewater management - Reuse of resources for efficiency 	<p>Clean Water and Sanitation / Responsible Consumption and Production</p>  

2.1.2) Eligible Social Categories

Eligible Social Categories	Eligible Projects/Assets Description	Social Benefits	Alignment with ASEAN SUS and ICMA SBG / UN SDGs
Affordable Basic Infrastructure	<ul style="list-style-type: none"> - Projects for the design, construction, operation, maintenance and upgrade station facilities, services and train environment for all or elderly and special need groups - Community health/hygienic services and equipment at transit stations, trains, buildings, facilities and infrastructure - Recreation areas for all passengers/community - Projects that support school/college students, and children¹¹/elderly i.e. fare discount 	<ul style="list-style-type: none"> - 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 - Good health and hygienic of all passengers - Provide universal access to safe, inclusive and accessible, green and public 	<p>Good Health and Well-Being / Industry, Innovation and Infrastructure / Sustainable Cities and Communities</p>   

¹¹ For children between 91-120 cm in height and not over 14 years old.

Eligible Social Categories	Eligible Projects/Assets Description	Social Benefits	Alignment with ASEAN SUS and ICMA SBG / UN SDGs
		spaces, in particular for women and children, older persons and persons with disabilities - Provide support to passengers affected by socioeconomic situation	
Employment Generation and Training	<ul style="list-style-type: none"> - Programmes for employment generation and unemployment prevention - Programmes for sharing knowledge to various educational institutions relating to management of the expressway and metro systems, to school, university students, which may become key human resources of BEM in the future - Programmes for sharing knowledge across the company relating to management and services of the expressway and metro systems - Relief measures for those affected by unexpected economic and financial disruptions caused by natural disasters and pandemics i.e. rental fee reduction 	<ul style="list-style-type: none"> - Achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value - Improve services quality and increase customer satisfaction - Provide support during economic recession 	Decent Work and Economic Growth 
Quality Education	<ul style="list-style-type: none"> - Distribution of scholarships to underprivileged children and youth 	<ul style="list-style-type: none"> - Promote educational opportunities for people in the society 	Quality Education 



2.1.3) Exclusions

Importantly, however, the proceeds of any BEM's sustainable financing instruments shall not be utilized towards the following activities:

- Nuclear or fossil fuel energy operations/transportation;
- Military contracting, Gambling, Weaponry;
- Manufacture and production of finished tobacco products;
- Conflict minerals and;
- Activities/projects associated with child labor/forced labor

2.2) Process of Project Evaluation and Selection

The selection and evaluation of eligible projects/assets for sustainable financing instruments will be performed in concert with BEM's Financial Planning Department, Quality Management Division, Corporate Image and Marketing Communication Department and Investor Relations Department ("Sustainable Finance Working Group").



In addition, Sustainable Finance Working Group will monitor the allocation process as per the Eligible Projects/Assets Description defined in the Use of Proceeds. Its responsibilities shall be included but not limited to:

- 1) Reviewing and validating annually the selection of Eligible Projects/Assets in accordance with the defined Eligible Projects/Assets Description in the Use of Proceeds section. Projects must also comply with all applicable laws and regulations, and the Company's policies and guidelines
- 2) Monitoring the Eligible Projects/Assets portfolio during the life of the transaction. The Sustainable Finance Working Group can decide to replace an Eligible Projects/Assets if it no longer meets the eligibility criteria
- 3) Monitoring any ESG controversy (such as controversies that may impact local communities or changes in ecosystems) that affects BEM and are directly related to an Eligible Project/Asset. If the Sustainable Finance Working Group deems that an eligible project becomes subject to a major ESG controversy, the Sustainable Finance Working Group will analyze it and may decide to exclude and replace such Eligible Project/Asset
- 4) Managing any future update of the Sustainable Financing Framework

2.3) Management of Proceeds

The proceeds from any sustainable financing instruments will be managed by BEM's Financial Planning Department. The proceeds of sustainable financing instruments will be transferred to its general account. The balance of the net proceeds will be periodically adjusted to match allocations to Eligible Projects/Assets made during the life of the sustainable financing instruments. If for any reason some projects/assets are no longer eligible, BEM will use its

best efforts to substitute such projects/assets as soon as is practical, once an appropriate Eligible Project/Asset for substitution has been identified by the Sustainable Finance Working Group.

Pending the full allocation to the Eligible Projects/Assets portfolio, the balance of the Sustainable Financing Account will be included in BEM's liquidity reserve and managed in accordance with its cash management policies and investment mandates i.e. cash and/or invest in other short-term liquid instruments. BEM intends to fully allocate the proceeds to the Eligible Projects/Assets within 30 months of issue date. Any interest and investment income earned on the above mentioned separately designated cash and investment accounts can be applied to defray costs incurred for the Eligible Projects/Assets and/or any reasonable administration costs associated with the management and administration of such sustainable financing instruments.

2.4) Reporting

For all issuances under this Sustainable Financing Framework, BEM aims to publish an allocation report (the "Allocation Report") annually until full allocation as well as an impact report (the "Impact Report") annually until the maturity of the sustainable financing instruments and as necessary in the event of any material changes.

2.4.1) Allocation report

Where feasible, BEM will publish the allocation report on its website within 12 months of issuance and then annually until full allocation of the proceeds of the relevant sustainable financing instruments. The report aims to disclose:

- The amount of net proceeds allocated per Eligible Projects/Assets
- The percentage of financing/refinancing of projects/assets
- The amount of unallocated proceeds, if any, at the date of reporting
- Location and status of the projects/assets

2.4.2) Impact report

Where feasible, BEM plans to publish an impact report as a part of sustainability report on its website annually until the maturity of the sustainable financing instruments which will provide information on the expected output and environmental benefits of the selected projects/assets. The relevant metrics will include:

Eligible Green/Social Categories	Examples of impact indicators
Clean Transportation	<ul style="list-style-type: none"> - Reduced and/or avoided GHG emissions (in t.CO2e/year) - # of passengers carried/passenger trips - Estimated reduction in car use in number or kilometres driven - Estimated reduction in fuel consumption - Total in kilometres of new or improved train lines - # of rolling stock, carriages, locomotives bought, repaired and modernized
Energy Efficiency	<ul style="list-style-type: none"> - Annual reduction of energy consumption - Annual GHG emissions avoided (in t.CO2e/year)
Renewable Energy	<ul style="list-style-type: none"> - Install capacity in megawatt - Annual GHG emissions avoided (in t.CO2e/year)
Water Management	<ul style="list-style-type: none"> - Annual reduction in water consumption - Annual volume of water reused (in cubic metres) - Annual volume of wastewater treated (in cubic metres)
Affordable Basic Infrastructure	<ul style="list-style-type: none"> - # of passengers carried/passenger trips - # of passengers/target population benefited - # of sanitation and healthcare equipment provided - # of Additional Cleaning Personnel Hired - # of recreation area/accessible infrastructure/facilities built - # of Road accident reduction - Estimated travel time reduction
Employment Generation and Training	<ul style="list-style-type: none"> - Estimated jobs created or retained - Customer satisfaction scoring - # of people within target group benefited
Quality Education	<ul style="list-style-type: none"> - # of scholarships awarded

In case of co-financing, the Sustainable Finance Working Group will aim to report on the pro rata share of impact or provide the share of financing from sustainable financing instrument proceeds as a percentage of total project financing if total project impact is being reported.

The impact report will also provide information on the methodology and assumptions used for calculation of the impact metrics.

Section 3 External Review

BEM will engage DNV, an internationally recognized external verifier, to provide the assessment on the alignment of the allocation of funds with Sustainable Financing Framework's criteria until the full allocation of the proceeds. The verification report will be made available to investors on the relevant section of its website.

Section 4 Amendments to this Framework

BEM may amend this Sustainable Financing Framework from time-to-time to reflect changes in Eligible Projects/Assets based on the evolution of its business model and sustainable guidelines, including its alignment to updated versions of the Green and Social Bond Principles, Sustainability Bond Guidelines, ASEAN Green and Social Bond Standards, ASEAN Sustainability Bond Standards, Green Loan Principles, and Social Loan Principles, as and when they are released, with the aim of adhering to best practices in the market. Such review may result in this Sustainable Financing Framework being updated and amended. The updates, if not minor in nature, will be subject to the prior approval of the Company and the independent third party viewer. Any future updated version of this Sustainable Financing Framework that may exist will either keep or improve the current levels of transparency and reporting disclosures, including the corresponding review by an External Reviewer. The updated framework, if any, will be published on BEM's website and will replace this Sustainable Financing Framework.