



Impact Report for Sustainability Bond



Introduction

Bangkok Expressway and Metro Public Company Limited (“BEM”) is determined to conduct its business operations by emphasizing environmental and social aspects, aiming to foster the Company’s sustainable business growth. Therefore, BEM has developed a Sustainable Financing Framework as a guideline to finance and/or refinance projects (or assets) related to environmental and social activities.

Sustainable Financing Framework

The Sustainable Financing Framework has been prepared according to international standards, including the Green Bond Principles (“GBP”), Social Bond Principles (“SBP”), and Sustainability Bond Guidelines (“SBG”) issued by the International Capital Market Association (ICMA); 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); the Green Loan Principles (“GLP”) and Social Loan Principles (“SLP”) issued by the Loan Market Association (LMA); the ASEAN Taxonomy, issued by the ASEAN Taxonomy Board; and the Thailand Taxonomy, issued by the Thailand Taxonomy Board.

Sustainability Debentures Portfolio

The details of the Sustainability Debentures as of December 31, 2025 are as follows:

No.	Bond No.	ThaiBMA Symbol	Issue Date	Maturity Date	Tenor (year)	Coupon Rate (p.a.)	Issue Size (THB mn)
1	1/2021	BEM264A	28 Apr 2021	28 Apr 2026	5	2.24%	2,000
2	1/2021	BEM284A	28 Apr 2021	28 Apr 2028	7	2.91%	1,000
3	1/2021	BEM314A	28 Apr 2021	28 Apr 2031	10	3.33%	1,000
4	1/2022	BEM279A	5 Sep 2022	5 Sep 2027	5	3.33%	1,500
5	1/2022	BEM329A	5 Sep 2022	5 Sep 2032	10	4.01%	1,000
6	1/2022	BEM349A	5 Sep 2022	5 Sep 2034	12	4.15%	1,000
7	1/2023	BEM264B	3 Apr 2023	3 Apr 2026	3	2.79%	1,800
8	1/2023	BEM284B	3 Apr 2023	3 Apr 2028	5	3.13%	300
9	1/2023	BEM334A	3 Apr 2023	3 Apr 2033	10	4.00%	3,400
10	1/2023	BEM354A	3 Apr 2023	3 Apr 2035	12	4.07%	1,000
11	1/2024	BEM272A	15 Feb 2024	15 Feb 2027	3	3.07%	1,000
12	1/2024	BEM292A	15 Feb 2024	15 Feb 2029	5	3.33%	1,500
13	1/2024	BEM312A	15 Feb 2024	15 Feb 2031	7	3.67%	1,000
14	1/2024	BEM342A	15 Feb 2024	15 Feb 2034	10	3.96%	1,000

No.	Bond No.	ThaiBMA Symbol	Issue Date	Maturity Date	Tenor (year)	Coupon Rate (p.a.)	Issue Size (THB mn)
15	1/2024	BEM362A	15 Feb 2024	15 Feb 2036	12	4.05%	500
16	2/2024	BEM279B	12 Sep 2024	12 Sep 2027	3	3.16%	2,500
17	2/2024	BEM299A	12 Sep 2024	12 Sep 2029	5	3.60%	3,400
18	2/2024	BEM349B	12 Sep 2024	12 Sep 2034	10	4.05%	600
19	2/2024	BEM369A	12 Sep 2024	12 Sep 2036	12	4.16%	500
Total							<u>26,000</u>

Sustainability Loan Portfolio

In 2025, BEM entered into the Green Loan agreement and the Sustainability Loan agreement with financial institutions in the amount of THB 3,000 million and THB 1,500 million respectively. The details of the Sustainability Loan as of December 31, 2025 are as follows:

No.	Type	Start	End	Tenor (year)	Interest rate (p.a.)	Size (THB mn)
1	Sustainability Loan	Feb 2022	Feb 2027	5	THOR+Spread	3,000
2	Sustainability Loan	Apr 2024	Apr 2029	5	THOR+Spread	2,000
3	Sustainability Loan	Nov 2024	Oct 2031	7	THOR+Spread	2,500
4	Green Loan	Apr 2025	Apr 2030	5	THOR+Spread	3,000
5	Sustainability Loan	Sep 2025	Aug 2030	5	THOR+Spread	1,500
Total						<u>12,000</u>

Proceeds Allocation

BEM fully allocated the proceeds from Sustainability Debenture and Sustainability Loan on the issuance and/or drawdown date to refinance debt and/or invest in the MRT Blue Line Project and/or the MRT Purple Line Project and/or the MRT Orange Line Project within the green and social categories regarding clean transportation and affordable basic infrastructure under the Company's Sustainable Financing Framework.

No.	Bond / Loan	MRT Project	Allocation Date	Allocation Amount (THB mn)	Proportion of Refinance : Invest	Investment Period
1	Bond 1/2021	Blue Line	28 Apr 2021	4,000	100% : 0%	Nov 2018 – Sep 2019
2	Sustainability Loan	Blue Line	28 Feb and 31 May 2022	3,000	100% : 0%	Oct 2019 – Feb 2020
3	Bond 1/2022	Blue Line	5 Sep 2022	3,500	100% : 0%	Mar 2020 – Nov 2020
4	Bond 1/2023	Blue Line	3 Apr 2023	6,500	100% : 0%	Dec 2020 – Nov 2021
5	Bond 1/2024	Blue Line	15 Feb 2024	5,000	100% : 0%	Dec 2021 – Sep 2022
6	Sustainability Loan	Purple Line	30 Apr 2024	2,000	100% : 0%	Sep 2021 – Mar 2023
7	Bond 2/2024	Blue Line	12 Sep 2024	2,500	100% : 0%	Oct 2022
8	Bond 2/2024	Orange Line	12 Sep 2024	4,500	0% : 100%	Jul 2024 – Sep 2024
9	Sustainability Loan	Blue Line	8 Nov 2024 and 30 Apr 2025	2,500	0% : 100%	Nov 2024 – Jun 2025
10	Green Loan	Blue Line	3 Apr 2025	3,000	100% : 0%	Oct 2022 – Apr 2023
11	Sustainability Loan	Blue Line	3 Sep 2025	1,500	0% : 100%	Jun 2025 – Nov 2025

Total 38,000

Impact Report

Sustainability project descriptions and environmental and social benefits

Project Name	MRT Blue Line	MRT Purple Line	MRT Orange Line
<p>Project Description</p>	<p>The M.R.T. Chaloem Ratchamongkhon Line Project (MRT Blue Line) consists of the Hua Lamphong - Bang Sue Section, the Hua Lamphong - Bang Khae Section and the Bang Sue-Tha Phra Section covering the total distance of 48 kilometers with 38 stations and has connected to the MRT Purple Line at Tao Poon Station and the MRT Orange Line at Thailand Cultural Centre Station and Bang Khun Non Station. The concession is on a PPP Net Cost basis, whereby MRTA invests in all civil works and the Company shall supply, install the M&E Equipment, and provide the operation and maintenance services. The Company is entitled to farebox revenue and undertaking activities and commercial development, including advertising, leasing space, and telecommunications services in the metro stations and the rolling stocks.</p>	<p>The M.R.T. Chalong Ratchadham Line Project (MRT Purple Line), Bang Yai - Bang Sue Section, covering the total distance of 23 kilometers with 16 stations and has connected to the MRT Blue Line at Tao Poon Station. The concession is on a PPP Gross Cost basis, whereby MRTA invests in all civil works and the Company invests in the M&E Systems and the rolling stocks (MRTA shall make a gradual repayment on a monthly basis for a period of 10 years.), as well as provides the operation and maintenance services in accordance with the specified service standards. The concession period is 30 years from September 4, 2013.</p>	<p>The MRT Orange Line Project : Bang Khun Non - Min Buri (Suwinthawong) Section has its route alignment connecting eastern Bangkok and western Bangkok covering the total distance of 35.9 kilometers with 28 stations and has connected to the MRT Blue Line at Thailand Cultural Centre Station and Bang Khun Non Station. The project is divided into two sections as follows: (1) the East Section from Thailand Cultural Centre Station to Yaek Rom Klao Station, covering a distance of 22.5 kilometers with 17 stations. (2) the West Section from Bang Khun Non Station to Thailand Cultural Centre Station, covering a distance of 13.4 kilometers with 11 stations. The concession is in a PPP Net Cost arrangement under which MRTA shall be responsible for the cost of civil works of the East Section and the Company shall invest</p>

	<p>The concession period is 30 years from the full service opening of the entire route on March 30, 2020.</p>		<p>in civil works of the West Section (MRTA shall be reimbursed in installments within a period of 6 years, starting from the third year.) and the costs of the M&E systems, rolling stocks, as well as system operation and maintenance management of the entire route. The Company has the exclusive right to collect fare revenue, including commercial development inside and outside the metro stations, elevated and underground structures, rolling stocks, and other building connections to the project. The concession period is 30 years starting from the commencement date of the commercial operation of the East Section within 2028.</p>
<p>Green and Social Categories</p>	<p>Clean transportation and Affordable Basic Infrastructure.</p>		
<p>Project Benefits</p>	<p>Provide clean transportation services, alleviate traffic problems, preserve environments, and enhance quality of life in the society.</p>		
<p>Passenger Trips</p>	<p>155,252,020 trips in 2025</p>	<p>24,852,968 trips in 2025</p>	<p>-</p>
<p>CO₂e Offset in tonnes</p>	<p>9,238 tonnes ^[1] in 2025</p>	<p>1,954 tonnes ^[1] in 2025</p>	<p>-</p>

Other Benefits	<ul style="list-style-type: none"> ● Energy and Environment Aspect The company implements action plans with resource management guidelines, such as energy usage, pollution control, and efficient waste management. The Company also promotes climate change awareness among employees while integrating modern technology into energy management. For example, fuel consumption reduction through replacement of internal combustion engine vehicles with electric vehicles project, streetlights and light bulbs replacement with LED project, solar power system installation project, water recycling system project for train washing plants, green office project and etc. to drive sustainability across all components of the value chain, leading to effective and aligned GHG emissions reduction. ● Corporate Social Responsibility and Community Relations Aspect The company has organized CSR activities under its strategy to promote happiness in three key areas: Happy Journey, Happy Living Society and Happy Planet e.g., BEM safety share project: encouraging safety at every step for the elderly, priority lift for individuals with special needs project, metro art project series 7 “good vibe only – mural of positive energy”, TCAS project: promoting education with a focus on schools along the MRT line, metro mall go green project, mangrove reforestation project and etc. to enhance the quality of life for the public, improve the quality and efficiency of modern, convenient, rapid, reliable, and punctuality services, while upholding good corporate governance and social and environmental responsibility in accordance with sustainability principles.
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Note : ^[1]The estimation of the reduction in Greenhouse Gas (GHG) emissions for the MRT Blue Line Project and the MRT Purple Line Project are based on a comparison of the GHG emissions between MRTs and buses, assuming that without the MRTs, passengers would have taken buses for their entire journeys. This is a conservative estimate, as passengers are likely to utilize a mix of minibuses, taxis and private cars, which emit more GHG than using buses alone. Using the following formula.

$$\text{GHG Emission avoided} = \frac{\text{Number of Passenger} \times (\text{Emission Factor of Bus} - \text{Emission Factor of MRT}) \times \text{Average Distance per Passenger}}{1,000}$$

1) Calculations of the bus's emission factor and the MRT's emission factor

Transport Mode	Emission Factor kgCO ₂ e per passenger-km	Computed by [Emission Factor ^[2] (kgCO ₂ e/kwh) ÷ Consumption Rate (km/litre) ÷ Capacity (PAX/vehicle)]
Bus	0.0112 ^[3]	
MRT Blue Line	0.0043	0.4999 kgCO ₂ e/kwh ÷ 0.131 km/kwh ÷ 886 PAX/vehicle
MRT Purple Line	0.0038	0.4999 kgCO ₂ e/kwh ÷ 0.145 km/kwh ÷ 920 PAX/vehicle

Reference : ^[2]A report published by the Thailand Greenhouse Gas Management Organization (Public Organization) ("TGO")

(http://thaicarbonlabel.tgo.or.th/admin/uploadfiles/emission/ts_578cd2cb78.pdf)

^[3]Model Shift in Passenger Transportation by Rail-based Mass Rapid Transit, Document No. T-VER-S-METH-03-01 Version 1 Page 6

(<https://ghgreduction.tgo.or.th/th/tver-method/t-ver-classify-methodology/t-ver-methodology3/item/3570-modal-shift-in-passenger-transportation-by-rail-based-mass-rapid-transit.html>)

2) Calculation of the GSG Emission Avoidance Estimates

Project Name	Number of Passenger (thousand trips/year)	Average Distance (kilometers/passenger)	Total GHG Emission Avoided (CO ₂ e tonnes/year)
MRT Blue Line	155,252	8.62	9,238
MRT Purple Line	24,853	10.55	1,954

3) For the MRT Orange Line Project : Bang Khun Non – Min Buri (Suwinthawong) Section, the GHG Emission Avoidance shall be calculated after the commencement date of the commercial operation of the East Section within 2028.