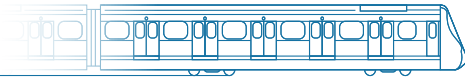


SUSTAINABLE FINANCE REPORT 2023



Introduction

As a corporation whose main business is to provide low carbon transportation to keep cities moving, sustainable financing constitutes a substantial portion of MTR's overall borrowing. MTR issued its first Green Bond in 2016, and has continued its efforts in raising different types of sustainable finance since then.

Up to the end of 2023, MTR has raised more than HK\$33 billion equivalent of sustainable financing to fund or refinance the various environmental-friendly projects described in this report.

Sustainable Finance Portfolio

At the end of 2023, MTR's outstanding sustainable finance portfolio consisted of 22 bonds (in four different currencies) as well as two loans (in EUR and HKD). The bonds were issued by either MTR or its issuance vehicle MTR Corporation (C.I.) Limited ("MTR CI") with the guarantee of MTR.

In 2023, one bond (CNY350 million) was redeemed and three new bonds totaling about HK\$1.3 billion were issued. The outstanding sustainable finance at the end of 2023 slightly increased to HK\$25.9 billion from HK\$25.0 billion a year ago.



Kwun Tong Line Extension (#A) & South Island Line (East) (#B)

The KTE & SIL has both been in operation since 2016 and continues to be a major part of our green project portfolios.

The following table lists out the sustainable financing that were outstanding as of 31 December 2023.

Outstanding Green Bonds

Year Issued	Identifier/ISIN	Issuer	Currency	Coupon (p.a.)	Maturity Date	Principal Amount
2016	MTRCIGB_USD_261102XS1509084775	MTR CI	USD	2.500%	2 Nov 2026	USD 600,000,000
2017	MTRCIGB_AUD_270628XS1637858546	MTR CI	AUD	3.300%	28 Jun 2027	AUD 171,000,000
2017	MTRCIGB_HKD_320920HK0000365228	MTR CI	HKD	2.460%	20 Sep 2032	HKD 722,000,000
2017	MTRGB_HKD_470717HK0000352432	MTR	HKD	2.980%	17 Jul 2047	HKD 338,000,000
2017	MTRCIGB_HKD_470906HK0000362761	MTR CI	HKD	2.830%	06 Sep 2047	HKD 315,000,000
2017	MTRGB_USD_470927XS1690683211	MTR	USD	3.375%	27 Sep 2047	USD 100,000,000
2018	MTRCIGB_HKD_480328HK0000409455	MTR CI	HKD	3.150%	28 Mar 2048	HKD 230,000,000
2020	MTRGB_USD_300819XS2213668085	MTR	USD	1.625%	19 Aug 2030	USD 1,200,000,000
2020	MTRGB_HKD_550624HK0000612025	MTR	HKD	2.550%	24 Jun 2055	HKD 500,000,000
2021	MTRGB_CNY_240324HK0000707460	MTR	CNY	2.900%	24 Mar 2024	CNY 1,000,000,000
2021	MTRGB_CNY_240325HK0000707445	MTR	CNY	2.800%	25 Mar 2024	CNY 250,000,000
2022	MTRGB_HKD_240502HK0000887635	MTR	HKD	4.960%	2 May 2024	HKD 330,000,000
2022	MTRGB_HKD_240815HK0000871613	MTR	HKD	3.250%	15 Aug 2024	HKD 500,000,000
2022	MTRGB_CNY_240906HK0000874187	MTR	CNY	2.850%	6 Sep 2024	CNY 250,000,000
2022	MTRGB_CNY_240912HK0000877156	MTR	CNY	2.870%	12 Sep 2024	CNY 420,000,000
2022	MTRGB_HKD_241028HK0000881935	MTR	HKD	5.000%	28 Oct 2024	HKD 450,000,000
2022	MTRGB_HKD_241101HK0000887429	MTR	HKD	5.000%	1 Nov 2024	HKD 312,000,000
2022	MTRGB_HKD_241103HK0000887742	MTR	HKD	4.970%	3 Nov 2024	HKD 310,000,000
2022	MTRGB_CNY_271212HK0000895661	MTR	CNY	2.900%	12 Dec 2027	CNY 150,000,000
2023	MTRGB_HKD_250529HK0000930005	MTR	HKD	3.950%	29 May 2025	HKD 500,000,000
2023	MTRGB_USD_260227HK0000913779	MTR	USD	4.770%	27 Feb 2026	USD 55,000,000
2023	MTRGB_USD_261128HK0000971413	MTR	USD	4.950%	28 Nov 2026	USD 50,000,000

Outstanding Green Loans/Sustainable Loans/Credit Facilities

Year Executed	Identifier	Currency	Maturity Date	Loan Amount
2020	MTRGL_HKD_250618	HKD	18 Jun 2025	HKD 1,500,000,000
2021	MTRGL_EUR_260111	EUR	11 Jan 2026	EUR 100,000,000

Project Portfolio

Following is a list of projects that are fully or partly financed with the proceeds of sustainable finance. In 2023, no new project was added to the portfolio.

#	Name of Project	Classification	Total Project Amount	Cost Incurred up to Dec 2023	Amount Financed by Sustainable Finance Proceeds
Train Lines and Infrastructure					
A	Kwun Tong Line Extension	Low Carbon Transportation	HK\$ 6,900 million	HK\$ 6,581 million	HK\$ 5,425 million
B	South Island Line (East)	Low Carbon Transportation	HK\$ 17,200 million	HK\$ 17,073 million	HK\$ 14,044 million
C	Replacement of 1 st Generation M-Trains	Low Carbon Transportation	HK\$ 7,100 million	HK\$ 2,092 million	HK\$ 1,448million
D	Replacement of Rail Power Line	Low Carbon Transportation	HK\$ 4,900 million	HK\$ 792 million	HK\$ 200 million
E	Battery Locomotives Acquisition	Low Carbon Transportation	HK\$ 265 million	HK\$ 63 million	HK\$ 63 million
M	Replacement of Light Rail Vehicles	Low Carbon Transportation	HK\$ 989 million	HK\$ 989 million	HK\$ 989 million
Energy Efficiency Improvement					
F	Replacement of Chillers at Stations/Depot Facilities	Energy Efficiency	HK\$ 1,100 million	HK\$ 1,039 million	HK\$ 1,039 million
G	Trackside Energy Storage (pilot)	Energy Efficiency	HK\$ 21 million	HK\$ 21 million	HK\$ 21 million
H	Smart Intelligent Power Module (R-IPM)	Energy Efficiency	HK\$ 98 million	HK\$ 90 million	HK\$ 90 million
I	Regenerative Station Energy Saving Inverter System	Energy Efficiency	HK\$ 8 million	HK\$ 7 million	HK\$ 7 million
Sustainable Stations and Buildings					
J	Maritime Square Extension	Sustainable Real Estate	HK\$ 2,600 million	HK\$ 2,527 million	HK\$ 2,527 million
K	Carbon Neutral Station Design	Sustainable Transit Station	HK\$ 5 million	HK\$5 million	HK\$ 5 million
Biodiversity Preservation					
L	Lok Ma Chau Wetland	Biodiversity and conservation	HK\$ 4~5 million per year	HK\$ 31 million (from 2017)	HK\$ 31 million
Total:			HK\$ 41,200 million	HK\$ 31,310 million	HK\$ 25,889 million



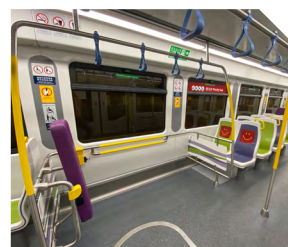
Battery Locomotives Acquisition (#E)

13 battery operated locomotives will replace the eight diesel and five old battery locomotives.



Replacement of Light Rail Vehicles (#M)

40 new light rail vehicles (LRV) have been in operation as part of MTR's long-term asset renewal strategy.

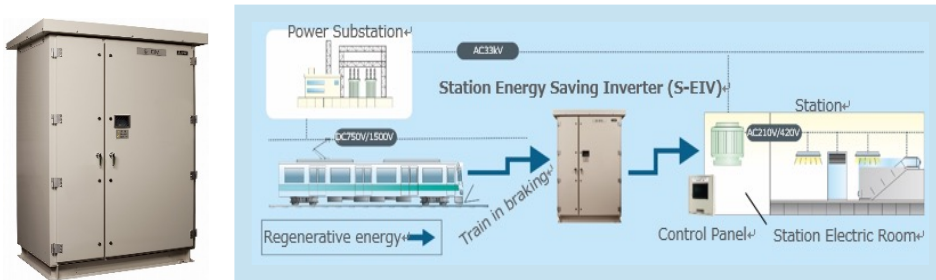


Use of Proceeds

The following table lists out how the financing proceeds were allocated to different projects, and the corresponding aggregate Greenhouse Gas (GHG) emission avoided. Computations of the GHG avoidance for each project is shown in the Appendix.

Year Raised	Description/ Identifier/ISIN	Principal Amount (HKD million equivalent)	Current Allocation in Projects (HKD million)													Total GHG emission avoidance (tonnes of CO ₂ e)
			A	B	C	D	E	F	G	H	I	J	K	L	M	
Previous financings and allocation aggregated																
2016-2022	Nineteen green bonds and two green loan*	24,568	5,335	13,930	1,200	194	21	838	21	65	7	2,525	5	27	400	85,700
Allocation for financings raised in 2023																
2023	MTRGB_HKD_250529 HK0000930005	500	-	-	-	-	-	-	-	-	-	-	-	-	500	3,200
2023	MTRGB_USD_260227 HK0000913779	431	90	114	-	-	-	201	-	-	-	2	-	4	20	3,820
2023	MTRGB_USD_261128 HK0000971413	390	-	-	248	6	42	-	-	25	-	-	-	-	69	2,820
Total Financing Amount and Allocation:		25,889	5,425	14,044	1,448	200	63	1,039	21	90	7	2,527	5	31	989	
Total GHG emission avoidance for each project (tonnes of CO ₂ e)			34,700	25,880	9,260	1,270	250	15,000	-	2,100	260	500	-	-	6,320	95,540
GHG emission avoidance per HKD million investment			6.4	1.8	6.4	6.4	4.0	14.5	-	23.4	36.1	0.20	-	-	6.4	

* Please refer to the 2016-2022 reports for the allocation of the financing proceeds raised in previous years. Allocation of the outstanding amount of individual financing will not change once assigned under the financing item's maturity.



Regenerative Station Energy Saving Inverter System (#1)

These projects are part of the regenerative braking system to help recycle braking energy back into the network.



Lok Ma Chau (LMC) Wetland Management (#L)

Restoration and management of the Lok Ma Chau wetland, which accounting for about half of the birds species recorded in Hong Kong.

MTR Green Bond, Green Finance and Sustainable Finance Frameworks

MTR set up a **Green Bond Framework** (“GBF”) in October 2016. **Sustainalytics** opined that the GBF was in alignment with the four pillars of the Green Bond Principles (2016) established by the International Capital Market Association. Expanding upon the foundation of the GBF, MTR established a **Green Finance Framework** (“GFF”) in June 2018 to enable it to include green loans in its financing portfolio. The GFF took into account the recommendation of the Green Loan Principles issued by the Asia Pacific Loan Market Association.

In August 2020, a **Sustainable Finance Framework** (“SFF”) was established so that the scope of eligible investments was further broadened to include projects in the development of sustainable urban infrastructure in support of the United Nations Sustainable Development Goals. A second-party **opinion** was provided by Sustainalytics on the SFF.

The Frameworks set out how the Corporation uses sustainable finance proceeds to fund or refinance eligible projects and initiatives, as well as the reporting thereon, thereby integrating ESG elements into its business decision-making process.

Summary of the Frameworks are as follows:

MTR Frameworks:

- ◆ MTR Green Bond Framework established in October 2016
- ◆ MTR Green Finance Framework established in June 2018
- ◆ MTR Sustainable Finance Framework established in August 2020
- ◆ Proceeds of sustainable financings will be used to fund or refinance, in whole or in part, Eligible Investments
- ◆ Proceeds of sustainable financings may be used to repay borrowings under MTR’s general credit facilities pending allocation to Eligible Investments
- ◆ Eligible Green Investments include projects in the following sectors:
 - Renewable Energy
 - Low Carbon Transportation
 - Energy Efficiency
 - Sustainable Transit Stations and Real Estate Properties
 - Adaptation to Climate Change
 - Biodiversity and Conservation
 - Water Management
 - Waste Management
 - Pollution Prevention
- ◆ Eligible Social Investments include projects in the following sectors:
 - Relief measures and programmes for employment generation and unemployment prevention for populations adversely affected by unexpected economic disruptions caused by natural disasters or pandemics. Relief measures may include, but are not limited to, rent moratorium for tenants
 - Affordable basic infrastructure, including initiatives, subsidy or investments in:
 - › Projects that support passengers affected by socioeconomic situation including but not limited to relief measures such as fare discount
 - › Sanitation and infection preventative services and equipment at transit stations, trains, buildings, real estates properties, facilities and infrastructure
 - › Projects for the design, construction, maintenance and upgrade of station facilities, services and train environment including but not limited to baby care and breast-feeding rooms for women, accessibility and barrier-free infrastructure and facilities for elderly and special need groups, among others

Sustainable investments

As there are no material changes in 2023, detail descriptions of the projects are not repeated in this report but can be obtained from earlier [reports](#). Computations of the equivalent GHG emission avoided are provided in Appendix.

Appendix I : Methodology for estimating environmental benefits of Low Carbon Transportation

Key approach and assumptions:

The GHG emission avoidance for MTR is calculated with

- ◆ The total passenger-km number for the asset of the project.
- ◆ The GHG emission reduction versus the next best alternative (public bus), which is a conservative assumption as passengers are also likely to use alternative means like mini-bus, private cars and taxis, all of which emit more GHG than a public bus.
- ◆ GHG Emission avoided =

$$\text{Number of Passenger-km} * (\text{Emission Factor of Average Bus} - \text{Emission Factor of MTR})$$

The emission factor for MTR trains is computed as: the Total GHG Emission divided by the Total Number of Passenger-km.

The Total Passenger-km travelled on MTR Heavy Rail system in 2023 was 18,770,795,518 (14,349,896,907 in 2022).

Total GHG Emission from railway operation (including fuel consumption, refrigerants, purchased electricity and water consumption) in 2023 was 903,722,000 kgCO₂e (845,683,000 kgCO₂e in 2022).

The GHG emission MTR rounds to **0.048kg CO₂e/passenger-km** (0.059 kgCO₂e/passenger-km in 2022).

The emission factor for buses was obtained from a report published by [UK Department of Business Energy & Industrial Strategy](#) (DEFRA).

Transport Mode	Emission Factor kgCO ₂ e per Passenger-km	Reference
Buses (average public bus)	0.10215 (2022: 0.0965)	Defra conversion factor
MTR Railway	0.048 (2022: 0.059)	As computed above

Hence total GHG emission avoidance for the MTR heavy rail transport (excluding Airport Express) rounds out to be:

$$18,471,950,146 * (0.10215 - 0.048) = 1,000,256 \text{ tonnes CO}_2\text{e}$$

Where 18,471,950,146 is the total passenger-km travelled on MTR heavy rail network excluding Airport Express.

Incremental Passenger Estimation Method for Project #B

Project #B is an extension to the MTR network with an ending node. For estimation of the GHG emission avoidance, we assume any usage of the lines (i.e. passengers that used any one of the stations along the lines) as an incremental usage as the train trips would not have happened without the lines. i.e. passengers would have taken additional trip on a bus/car from the previous terminal station, or passengers would have made the full trip outright on bus/car.

In 2023, the annual passenger number was 52,607,000 (2022: 42,336,000), and the average travelling distance of each passenger was 11.1km in 2023 (10.7km for 2022).

Annual GHG Emissions Avoided =

$$(\text{Emission Factor for MTRC} - \text{Emission Factor for public Bus}) * \text{Annual Passenger number} * \text{Average Passenger Distance}$$

Projects	Current Investment Amount (Total investment amount)	Annual GHG Emissions Avoided [tonnes CO ₂ e]
#B	HK\$ 14,044 million (HK\$ 17,200 million)	25,880 (31,700 for complete project)

Asset Value based Estimation method for Project #A, #C, #D and #M

Project #A was previously evaluated as an extension with an ending node along the Kwun Tong line. Since the Tuen Ma line's opening in mid-2021, one of the stations along the extension (Ho Man Tin Station) has served as an interchange station between Kwun Tong line and the Tuen Ma line. The GHG emission avoidance computation has hence been switched to the asset value based approach to better reflect the station's characteristics.

Projects #C, #D and #M are mid-life asset replacement projects that are crucial to upkeep the operation of the network.

The GHG emission avoidance number for each of these projects is estimated based on the amount of expenditure divided by the Total Asset Value of the MTR rail system (inclusive of KCRC rail system), multiplied by the total GHG emission avoided by the whole system.

- ◆ Total Asset Value of the heavy rail system:

HKD 102.3 billion¹ + HKD 54.0 billion²

- ◆ GHG Emission avoided for project =

Project Investment Amount/Total Asset Value * GHG Emission Avoidance for MTR Heavy Rail Network

Projects	Current Investment Amount (Total investment amount)	Annual GHG Emissions Avoided [tonnes CO ₂ e]
#A	HK\$ 5,425 million (HK\$ 6,900 million)	34,700 (44,100 for complete project)
#C	HK\$ 1,448 million (HK\$ 7,100 million)	9,260 (45,400 for complete project)
#D	HK\$200 million (HK\$ 4,900 million)	1,270 (31,300 for complete project)
#M	HK\$ 989 million (HK\$ 989 million)	6,320 (6,320 for complete project)

1. Carry value of railway assets for MTRC as of end 2022 (page 209, 2022 MTRC [annual report](#))

2. Carry value of railway assets for KCRC as of end 2022 (page 54, 2022 KCRC [annual report](#))

Other Estimation Methods for Project #E (Battery Locomotives Acquisition)

The operating efficiency and performance of the 13 new electric-battery locomotives will be an improvement over the existing 8 diesel and 5 old battery locomotives.

On average, each locomotive is active 8 hours/day.

For diesel locomotive, approximately 51 litres of diesel is consumed each hour.

Total CO₂e emission per year³ = 2.61 * 365 * (8 * 51L) = 388.7 tonnes

For electric-battery locomotive, CO₂e emission is calculated based on average emission factor of the power companies.

Electric-Battery Locomotive (old) electric consumption = 1,408 kWh / day

Total CO₂e emission per year = 0.525⁴ * 365 * 1408 = 269.8 tonnes

Electric-Battery Locomotive (new) electric consumption = 1,360 kWh / day

Total CO₂e emission per year = 0.525⁴ * 365 * 1360 = 260.6 tonnes

Total CO₂e emission reduction for 13 locomotive replacements

= 8 * (388.7 – 260.6) + 5 * (269.8 – 260.6)

= 1,070.8 tonnes

Projects	Current Investment Amount (Total investment amount)	Annual GHG Emissions Avoided [tonnes CO ₂ e]
#E	HK\$ 63 million (HK\$ 265 million)	250 (1,071 for complete project)

3. Emission of CO₂e for usage of diesel can be obtained [here](#) (report by the Environmental Protection Department and the Electrical and Mechanical Services Department).

4. Average CO₂e emission factors of the power companies = Average of CLP emission factor for 2023(0.39kgCO₂e/kWh) and HKE emission factor for 2023 (0.66kgCO₂e/kWh)

Other Estimation Methods for Project #F, #G, #H, #I, #J

Projects #F, #G, #H and #I are energy efficiency improvement projects that are crucial to energy saving of the network. The computation of the estimated electricity consumption saved annually are available in previous reports.

- ◆ GHG Emission reduction for project =

Electricity consumption saved * Average emission factor of the power companies⁴

Projects	Electricity consumption saved	Annual GHG Emissions Reduced [tonnes CO ₂ e]
#F	30.4 GWh	15,000 (15,900 for complete project)
#G	600 MWh	320 for complete project
#H	4.3 GWh	2,100 (2,300 for complete project)
#I	579 MWh	260 (300 for complete project)

4. Average CO₂e emission factors of the power companies = Average of CLP emission factor for 2023(0.39kgCO₂e/kWh) and HKE emission factor for 2023 (0.66kgCO₂e/kWh)

Projects #J (Maritime Square Extension) is a shopping mall building with the design of a "Floating Garden" with multi-level accessible green terraces and a water covered skylight at the roof garden. The energy savings is estimated at 25.9% for the commercial portion and 21.6% for the car park respectively (average 23.8%).

The annual electricity consumption for the Maritime Square extension for 2023 was 4,204 MWh.

Energy Savings is calculated as:

Consumption / (1 – Average saving rate) – Consumption

- ◆ GHG Emission reduction for project =

Electricity consumption saved * Emission factor of CLP⁵

Projects	Electricity consumption saved	Annual GHG Emissions Reduced [tonnes CO ₂ e]
#J	1,313 MWh	500 (512 for complete project)

5. CLP emission factor for 2023: 0.39kgCO₂e/kWh



VERIFICATION STATEMENT

Scope of Verification

Hong Kong Quality Assurance Agency (HKQAA) has been engaged by MTR Corporation Limited (“MTR”, Hong Kong stock code: 66) to undertake an independent verification for providing limited assurance on the compliance of the projects included in the green and social project portfolio and financed through the proceeds of 22 MTR Green and/or Social Bonds issued by MTR Corporation (C.I.) Limited (a subsidiary of MTR) and MTR Corporation Limited, and 2 green credit facilities (refer to annex 1 for details) under MTR Sustainable Finance Framework (“Framework”). The scope of HKQAA’s verification covers the data and information for the period 1st January 2023 to 31st December 2023.

Level of Assurance and Methodology

The process applied in this verification was based on the International Standard on Assurance Engagements 3000 (Revised) – “Assurance Engagement Other Than Audits or Reviews of Historical Financial Information” issued by the International Auditing and Assurance Standards Board (ISAE 3000). Our evidence gathering process was designed to obtain a limited level of assurance as set out in ISAE 3000 for the purpose of devising the verification.

Our verification procedure performed covered reviewing of relevant documentation, discussing with responsible personnel and verifying the selected representative samples of project, data and information. Raw data and supporting evidence of the selected samples were also thoroughly examined during the verification process.

Independence

MTR is responsible for the collection and presentation of the information presented. HKQAA did not involve in calculating, compiling, or development of the Framework. Our verification activities are independent from MTR.

Limitations

There are inherent limitations in performing assurance. Assurance engagements are based on selective testing of the information and data being examined. It is possible that fraud, error or non-compliance may occur and not be detected. The assurance did not provide assurance on information outside the defined reporting boundary and period. There are additional inherent risks associated with assurance over non-financial information including reporting against standards which require information to be assured against source data compiled using definitions and estimation methods that are developed by the reporting entity. Finally, adherence to ISAE 3000 is subjective and will be interpreted differently by different stakeholder groups.

Our assurance was limited to the MTR Sustainable Finance Framework post-issuance, and did not include statutory financial statements, financial statements and economic performance. Our assurance is limited to policies and procedures in place as of 31st December 2023.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the selected information as at 31st December 2023 has not been prepared, in all material respects, in accordance with the specified criteria.

Signed on behalf of Hong Kong Quality Assurance Agency



Connie Sham
Head of Audit



Jorine Tam
Director, Corporate Business

20 April 2024

Annex 1: List of Bonds and Credit Facilities

Bonds:

Year Issued	Identifier/ISIN	Issuer
2016	MTRCIGB_USD_261102 XS1509084775	MTR Corporation (C.I.) Limited
2017	MTRCIGB_AUD_270628 XS1637858546	MTR Corporation (C.I.) Limited
2017	MTRCIGB_HKD_320920 HK0000365228	MTR Corporation (C.I.) Limited
2017	MTRGB_HKD_470717 HK0000352432	MTR Corporation Limited
2017	MTRCIGB_HKD_470906 HK0000362761	MTR Corporation (C.I.) Limited
2017	MTRGB_USD_470927 XS1690683211	MTR Corporation Limited
2018	MTRCIGB_HKD_480328 HK0000409455	MTR Corporation (C.I.) Limited
2020	MTRGB_USD_300819 XS2213668085	MTR Corporation Limited
2020	MTRGB_HKD_550624 HK0000612025	MTR Corporation Limited
2021	MTRGB_CNY_240324 HK0000707460	MTR Corporation Limited
2021	MTRGB_CNY_240325 HK0000707445	MTR Corporation Limited
2022	MTRGB_HKD_240502 HK0000887635	MTR Corporation Limited
2022	MTRGB_HKD_240815 HK0000871613	MTR Corporation Limited
2022	MTRGB_CNY_240906 HK0000874187	MTR Corporation Limited
2022	MTRGB_CNY_240912 HK0000877156	MTR Corporation Limited
2022	MTRGB_HKD_241028 HK0000881935	MTR Corporation Limited
2022	MTRGB_HKD_241101 HK0000887429	MTR Corporation Limited
2022	MTRGB_HKD_241103 HK0000887742	MTR Corporation Limited
2022	MTRGB_CNY_271212 HK0000895661	MTR Corporation Limited
2023	MTRGB_HKD_250529 HK0000930005	MTR Corporation Limited
2023	MTRGB_USD_260227 HK0000913779	MTR Corporation Limited
2023	MTRGB_USD_261128 HK0000971413	MTR Corporation Limited

Green Loans/Sustainable Loans/Credit Facilities:

Year Executed	Identifier
2020	MTRGL_HKD_250618
2021	MTRGL_EUR_260111