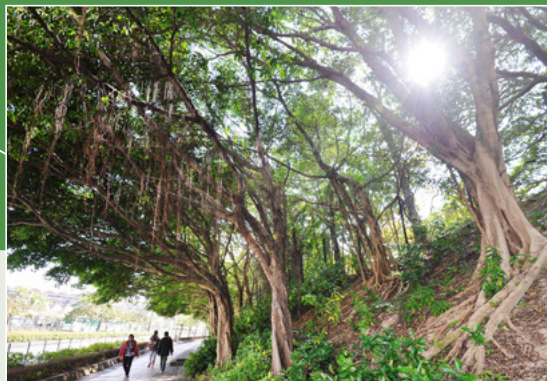


GREEN BOND REPORT 2017



caring for life's journeys



Introduction

In October 2016, MTR established its Green Bond Framework (“GBF”) to provide guidance on the issuance, use of proceeds and reporting of its green bonds. The Framework, in line with the core components of the Green Bond Principles set out by the International Capital Market Association, further integrates MTR’s environmental, social and corporate governance into its financing and decision-making process.

By the end of 2017, MTR had issued a total of six green bonds - the inaugural US\$ green bond in 2016, and five green bonds in 2017 via private placements. The green bond issuances allowed MTR to tap into a new and fast growing bond investor base and hence expanded and diversified its funding sources.

The green bonds are also helping to promote the local green bond market, in line with the Hong Kong SAR Government’s efforts to establish “Hong Kong as a regional green finance hub”.

Green Bond Portfolio

At the end of 2017, MTR’s green bond portfolio consisted of six bonds in three different currencies. The bonds were issued either directly by MTR or by its issuance vehicle MTR Corporation (C.I.) Limited (“MTR CI”) with guarantee of MTR. The following table lists out the key terms of the six green bonds.

Year Issued	Identifier/ISIN	Issuer	Currency	Coupon (p.a.)	Maturity Date	Principal Amount
2016	MTRCIGB_USD_261102 XS1509084775	MTR CI	USD	2.500%	2 Nov 2026	USD 600,000,000
2017	MTRCIGB_AUD_270628 XS1637858546	MTR CI	AUD	3.300%	28 Jun 2027	AUD 171,000,000
2017	MTRCIGB_HKD_320920 HK0000365228	MTR CI	HKD	2.460%	20 Sep 2032	HKD 722,000,000
2017	MTRGB_HKD_470717 HK0000352432	MTR	HKD	2.980%	17 Jul 2047	HKD 338,000,000
2017	MTRCIGB_HKD_470906 HK0000362761	MTR CI	HKD	2.830%	6 Sep 2047	HKD 315,000,000
2017	MTRGB_USD_470927 XS1690683211	MTR	USD	3.375%	27 Sep 2047	USD 100,000,000

Project Portfolio

In 2017, MTR's Project Portfolio funded by the green bond proceeds was expanded to include two projects in energy efficiency and one in biodiversity preservation. The following table presents a summary of the projects. Details of each project are available in Appendix I.

#	Name of Project	Classification	Total Project Amount	Cost Incurred up to Dec 2017	Amount Financed by Green Bond Proceeds
A	Kwun Tong Line Extension	Low carbon transport	HK\$6.9 billion	HK\$6.0 billion	HK\$2.273 billion
B	South Island Line	Low carbon transport	HK\$17.2 billion	HK\$16.2 billion	HK\$5.506 billion
C	Air Cooled Chiller Replacement	Energy efficiency	HK\$1.1 billion	HK\$32 million	HK\$32 million
D	Trackside Energy Storage (pilot)	Energy efficiency	HK\$20 million	HK\$19 million	HK\$19 million
E	Lok Ma Chau Wetland	Biodiversity preservation	HK\$4 million per year	HK\$4 million*	HK\$4 million
				Total:	HK\$7.834 billion

* Cost incurred in 2017

Use of Proceeds

The following table lists out how the green bond proceeds were allocated to the different projects.

Year Issued	Identifier/ISIN	Principal Amount (HKD million)	Allocation in Projects (HKD million)				
			A	B	C	D	E
2016	MTRCIGB_USD_261102 XS1509084775	4,654	1,305	3,349			
2017	MTRCIGB_AUD_270628 XS1637858546	1,024	368	656			
2017	MTRCIGB_HKD_320920 HK0000365228	722	200	490	32		
2017	MTRGB_HKD_470717 HK0000352432	338	100	219		19	
2017	MTRCIGB_HKD_470906 HK0000362761	315	100	211			4
2017	MTRGB_USD_470927 XS1690683211	781	200	581			
Total		7,834	2,273	5,506	32	19	4

MTR Green Bond Framework

The [MTR Green Bond Framework](#) was set up in October 2016 to provide guidance on the issuance, use of proceeds and reporting of green bonds. The Green Bond Framework aligns with the Green Bond Principles (“GBP”) of the International Capital Market Association. The GBP are voluntary process guidelines that recommend transparency and disclosure, and promote integrity in the development of the green bond market by clarifying the approach for issuance of green bond.

In 2016 MTR engaged Sustainalytics to provide a [second opinion](#) on MTR’s GBF. Sustainalytics determined that the MTR GBF is aligned with the four pillars of the GBP and is credible and robust.

MTR Green Bond Framework

- Established in October 2016
- Proceeds of MTR Green Bonds will be used to fund or refinance, in whole or in part, Eligible Investments
- Proceeds of MTR Green Bonds may be used to repay borrowings under MTR’s general credit facilities pending allocation to Eligible Investments
- Eligible Investments include projects in the following sectors:
 - » 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

APPENDIX

Appendix I - Project Details (#A ~ #E)

Name of Investment	(#A) Kwun Tong Line Extension
Total Investment Amount	HK\$6.9 billion
Investment Amount Funded by Green Bonds	HK\$2.273 billion
Category of Eligible Investment	Low Carbon Transportation
Description of Investment	<p>On 17th May 2011, the Company entered into a project agreement with the Hong Kong SAR Government for the financing, design, construction and operation of the Kwun Tong Line Extension. This 2.6-kilometre Kwun Tong Line Extension commenced service on 23rd October 2016 and is an extension of the existing Kwun Tong Line from Yau Ma Tei Station to Whampoa Station with one intermediate station at Ho Man Tin.</p> <p>With the completion of the Kwun Tong Line Extension, Whampoa Station is now the terminus of Kwun Tong Line, while Ho Man Tin Station will be an interchange station for the Shatin to Central Link currently under construction.</p> <p>With the extended MTR Kwun Tong Line, it takes only about 5 minutes to travel between Whampoa and Yau Ma Tei stations, which would otherwise take about 15 to 20 minutes using other public road transport. The new MTR extension is expected to significantly alleviate road traffic congestion in the areas of Ho Man Tin and Whampoa.</p>
Beneficial Environmental Impact Estimate	<ol style="list-style-type: none"> 1) 21,000¹ tonnes of CO₂ emissions avoided per year for the full project. Pro-rated 3.04 tonnes of CO₂ emissions avoided per year for each HK\$1 million of investment in the project. 2) Other beneficial impacts: Reduction of road traffic and congestion leads to lower environmental impacts from ground vehicles such as roadside air pollution. The Hong Kong Government has identified poor roadside air quality and worsening congestion as one of the reasons for air quality challenges in Hong Kong, impacting the public health. 3) In all our new underground stations along this extension, initiatives such as regenerative braking, full platform screen doors and efficient chiller equipment have been implemented to conserve energy and reduce pollution.

Note ¹: Please see Appendix II for the method of estimating the CO₂ avoided for projects #A and #B.

The CO₂ emission avoidance has been updated from the previous report using the full year passenger number in 2017 for the Kwun Tong Line Extension.

Name of Investment	(#B) South Island Line (East)
Total Investment Amount	HK\$17.2 billion
Investment Amount Funded by Green Bonds	HK\$5.506 billion
Category of Eligible Investment	Low Carbon Transportation and Energy Efficiency
Description of Investment	<p>On 17th May 2011, the Company entered into a project agreement with the Hong Kong SAR Government for the financing, design, construction and operation of the South Island Line (East). Construction commenced immediately thereafter. The 7-kilometre South Island Line (East) commenced service on 28 December 2016 and is a medium-capacity metro line connecting the current MTR network from Admiralty Station to the Southern District of Hong Kong, via new stations at Ocean Park, Wong Chuk Hang, Lei Tung and South Horizons. This new line is designed with features responding to the transport needs of the community. It will also promote tourism and economic activities in Southern District.</p> <p>It takes about 4 minutes to ride between Admiralty and Ocean Park stations and 11 minutes between Admiralty and South Horizons stations. The South Island Line (East) is expected to significantly alleviate road traffic congestion in the Aberdeen Tunnel.</p>
Beneficial Environmental Impact Estimate	<ol style="list-style-type: none"> 1) 21,000² tonnes of CO₂ emissions avoided per year for the full project. Pro-rated 1.22 tonnes of CO₂ emissions avoided per year for each HK\$1 million of investment in the project. 2) 629,600 kWh of electricity saved with the regenerative braking and trackside energy storage system annually³. 3) Environmental initiatives include upgrading and extending noise barriers, green roof, special wall designs as well as providing green open space in Kellett Bay for the public have been implemented. 4) Other beneficial impacts: Reduction of road traffic and congestion leads to lower environmental impacts (roadside air pollution) from ground vehicles. The Hong Kong Government has identified poor roadside air quality and worsening congestion as one of the reasons for the air quality challenges in Hong Kong, impacting the public health.

Note ²: Please see Appendix II for the method of estimating the CO₂ avoided for projects #A and #B.

The CO₂ emission avoidance has been updated from the previous report using the full year passenger number in 2017 for the South Island Line (East).

Note ³: Annual savings projected based on on-site measurement in Q1 2017.

Name of Investment	(#C) Replacement of Air-Cooled Chillers
Total Investment Amount	HK\$1.09 billion
Investment Amount Funded by Green Bonds	HK\$32 million
Category of Eligible Investment	Energy Efficiency
Description of Investment	<p>The large-scale chiller replacement programme at 38 MTR stations and four railway depots started in the fourth quarter of 2017. By 2023, a total of 154 chillers would be replaced with more advanced and environmentally friendly systems.</p> <p>The new station chillers would not only provide a more comfortable station environment for passengers, but also enhance energy efficiency with a variable-frequency drive inverter technology that could adjust the power capacity based on the actual temperature in the station.</p>
Beneficial Environmental Impact Estimate	<p>As the operating efficiency and performance of the new chillers will be an improvement over the existing chillers, the energy consumption is expected to be reduced by an estimated:</p> <ul style="list-style-type: none"> 5,000MWh per year by April 2019 12,300MWh per year by April 2020 16,300MWh per year by April 2021 19,300MWh per year by April 2022 25,400MWh per year by April 2023 30,400MWh per year by April 2024

Name of Investment	(#D) Pilot Installation of Trackside Energy Storage Devices
Total Investment Amount	HK\$20 million
Investment Amount Funded by Green Bonds	HK\$19 million
Category of Eligible Investment	Energy Efficiency
Description of Investment	<p>The energy storage devices were installed at two locations – Tsuen Wan Depot (TWD) and Kowloon Ventilation Building (KVB) for energy saving. The regenerative energy obtained from the braking of Electric Multiple Units (EMU) is stored in the storage devices and back-fed to the power line to be used by EMUs during acceleration.</p>
Beneficial Environmental Impact Estimate	<p>The energy consumption is estimated to be reduced by approximately 600MWh per year based on the measured energy savings in 2017.</p>

Name of Investment	(#E) Lok Ma Chau (LMC) Wetland Management
Total Investment	HK\$4 million per year
Investment Funded by Green Bond	HK\$4 million in 2017
Category of Eligible Investment	Biodiversity Protection
Background/Description of Investment	<p>LMC wetland was covered in an Environmental Impact Assessment report by Environment Protection Department when Kowloon-Canton Railway (KCRC) built the Lok Ma Chau extension. KCRC/MTR has since restored and managed the wetland after the completion of the station.</p> <p>(http://www.epd.gov.hk/eia/register/report/eiareport/eia_0442000/C13/C13.htm)</p>
Highlights of Investment	<p>The 32-hectare LMC wetland provides a variety of habitats for a wide range of ecologically important species including birds, mammals and reptiles. Located at the eastern side of the Mai Po Inner Deep Bay Ramsar Site, the LMC wetland plays a pivotal role in regional biodiversity and helps to maintain the sustainability of local migratory birds.</p> <ul style="list-style-type: none"> • Overall, more than 260 bird species have been recorded in the LMC wetland, accounting for half of all species ever recorded in Hong Kong. These include the first Hong Kong recorded sightings of Lesser White-fronted Goose, Greater White-fronted Goose and Common House Martin. • Seven globally threatened bird species were recorded in 2017 during regular bird surveys in the LMC wetland, including Falcated Duck, Ferruginous Duck, Japanese Quail, Oriental Stork, Black-faced Spoonbill, Greater Spotted Eagle, Eastern Imperial Eagle, Red-necked Stint, Curlew Sandpiper, Collared Crow, Yellow-breasted Bunting. In particular, the LMC wetland hosts a high number of Black-faced Spoonbill, a globally-threatened species. About 300 individual Black-faced Spoonbills were recorded in the wetland in January 2017, which accounted for 9% of the total number in the world. • Various bird species also use the EEA as a breeding site. The breeding population of White-shouldered Starling has significantly increased upon the installation of the nest boxes in the LMC wetland. White-shouldered Starling is a rare breeding summer visitor in Hong Kong. In accordance with Carey et al. 2001, less than 50 breeding pairs were recorded in Hong Kong. Since 2010, about 120 nest boxes have been installed in the LMC wetland and over 90% of the boxes have been used by nesting White-shouldered Starling. Currently, the team is implementing measures to attract Pheasant-tailed Jacana (local concerned targeted species) to breed in the wetland. • The LMC wetland also provides habitats for dragonfly, reptiles, mammals and amphibian species. There have also been regular sightings of the Chinese Soft-shelled turtle, which is a threatened species, and the Eurasian Otter, which is a near-threatened species.

Appendix II - Methodologies for Estimating Environmental Benefits

(1) Railway projects (#A & #B)

Key approach and assumptions:

- The estimation on the reduction of Green House Gas (GHG) emission for Kwun Tong Line Extension and South Island Line is based on a comparison of the GHG emissions between MTR's railway lines with that of local buses, i.e. assuming that without the railway lines, passengers would have taken bus for their full journeys. This is a conservative estimate as passengers would likely have used a mix of minibus, taxis and private cars, all emitting more GHG than a local bus.

GHG Emission avoided

$$= \text{Number of Passenger} \times (\text{Emission Factor of Average Bus} - \text{Emission Factor of MTR}) \times \text{Average Distance per Passenger}$$

- The emission factor for MTR trains is computed using the total GHG emission divided by the total number of passenger-km.

The total passenger-km travelled on MTR Heavy Rail system in 2017 was 19,378,526,100.

Total GHG emission from railway operation (including fuel consumption, refrigerants, purchased electricity and water consumption) in 2017 was 1,055,125,740 kgCO₂e.

The GHG emission factor for MTR works out to be 0.054kgCO₂e/passenger-km.

- The emission factor for buses was obtained from the following report published by UK Department of Business Energy & Industrial Strategy (DEFRA).

(<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2017>)

Transport Mode	Emission Factor kgCO ₂ e per Passenger-km	Reference
Buses (average local bus)	0.10259	Defra conversion factor, link as above
MTR Railway	0.05400	As computed above

Emission Avoidance Estimation for MTR

The average travelling distance of each passenger was 10.8km. Based on the number of passengers for Kwun Tong Line Extension and South Island Line in 2017, the corresponding avoidance of CO₂ emission are computed as follows:

New Lines	Annual Passenger Number ('000)	Annual GHG Emissions Avoided (tonnes CO ₂ e)
KTE	40,546	21,000
SIL	40,494	21,000

(2) Chiller Tower Project (#C)

In total, 154 existing chillers will be replaced with 133 new Air Cooled/Water Cooled Chillers

Estimated old chiller total energy consumption per annum:	92.1 GWh
Estimated new chiller total energy consumption per annum:	61.7 GWh
Estimated energy conserved per annum:	30.4 GWh

(3) Trackside Storage System Project (#D)

The measured energy conservations are given in the following table:

	Energy Conserved in 2017 (kWh)	
	TWD	KVB
Jan' 17	18,991	33,633
Feb' 17	16,966	29,415
Mar' 17	19,323	33,759
Apr' 17	14,701	32,270
May' 17	19,381	35,879
Jun' 17	17,937	34,905
Jul' 17	18,292	19,388
Aug' 17	19,154	Equipment shutdown from mid Jul 17 to mid Sep 17
Sep' 17	18,409	16,135
Oct' 17	24,197	30,682
Nov' 17	29,320	35,730
Dec' 17	31,703	33,354
Total	248,374	335,150

Appendix III - Green Bond Verification Statement



VERIFICATION STATEMENT

Scope of Verification

Hong Kong Quality Assurance Agency (HKQAA) has been engaged by MTR Corporation ("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 project portfolio and financed through the proceeds of 5 MTR Green Bonds (please refer to annex 1 for detail) issued by MTR Corporation (C.I.) Limited (a subsidiary of MTR) and MTR Corporation Limited under MTR's Green Bond Framework ("Framework"). The scope of HKQAA's verification covers the data and information for the period 1st April 2017 to 31st March 2018.

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, interviewing responsible personnel with accountability for preparing the reporting contents and verifying the selected representative sample 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 does not involve in calculating, compiling, or in the development of the Report. Our verification activities are independent from MTR.

Limitations

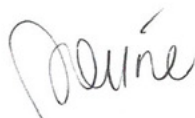
There are inherent limitations in performing assurance as follows. Assurance engagements are based on selective testing of the information and data being examined and it is possible that fraud, error or non-compliance may occur and not be detected. The assurance did not provide assurance on information outside the defined reporting boundary and period. There are additional inherent risks associated with assurance over non-financial information including reporting against 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 Green Bond 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 March 2018.

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 March 2018 has not been prepared, in all material respects, in accordance with the reporting criteria.

Signed on behalf of Hong Kong Quality Assurance Agency



Jorine Tam
Director, Corporate Business
18 May 2018

Annex 1 - List of the issued bond



香港品質保證局

Annex 1: List of the issued bond

Issuer name	Bond Name (identifier/ISIN)
MTR Corporation (C.I.) Limited	MTRCIGB_HKD_320920 HK0000365228
MTR Corporation (C.I.) Limited	MTRCIGB_AUD_270628 XS1637858546
MTR Corporation Limited	MTRGB_HKD_470717 HK0000352432
MTR Corporation (C.I.) Limited	MTRCIGB_HKD_470906 HK0000362761
MTR Corporation Limited	MTRGB_USD_470927 XS1690683211