



BTS GROUP HOLDINGS PCL
Green Bond Framework

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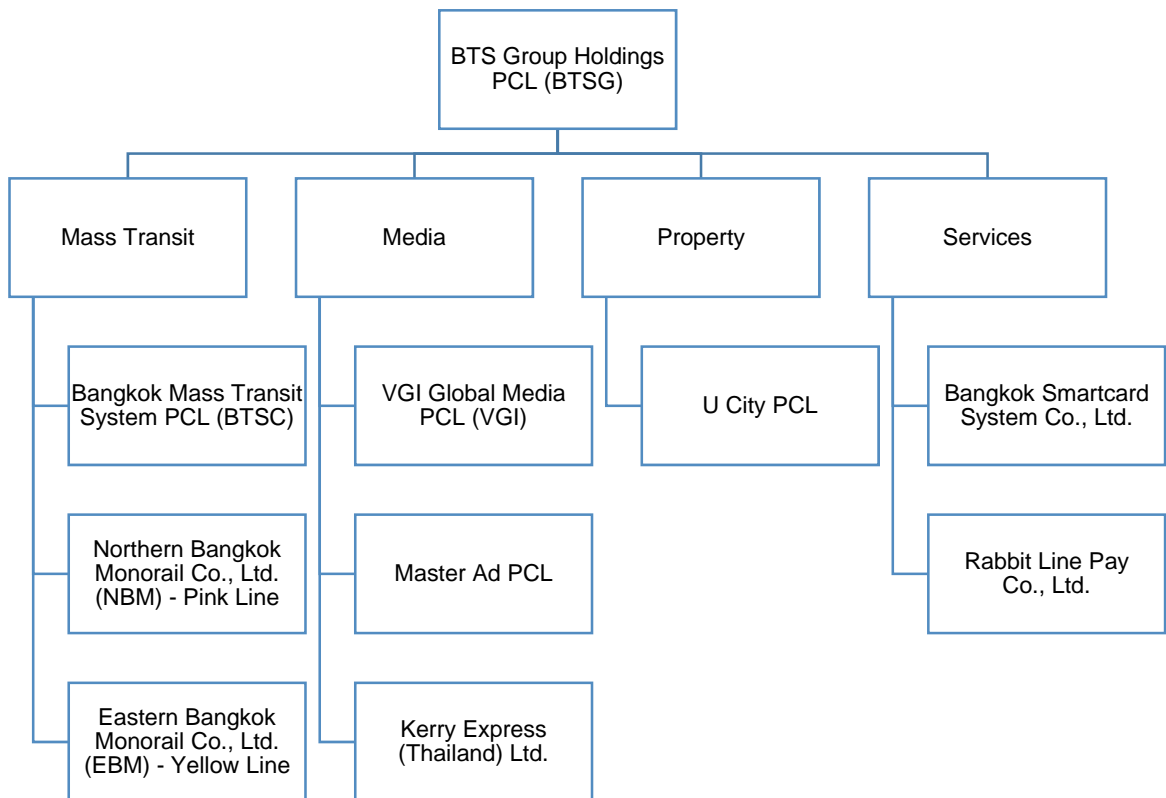
1 Overview

1.1 BTS Group Overview

BTS Group Holdings PCL (BTSG) is the preeminent mass transit service provider in Thailand and a privately-owned conglomerate. Listed on the Stock Exchange of Thailand (SET), BTSG is a constituent member of the SET50 “Bluechip” Index and MSCI Asia Pacific Index and is among the largest companies in Thailand. The company is also engaged in complementary businesses in Media, Property and Services.

In 2018, BTSG was selected as a member of Dow Jones Sustainability Indices (DJSI) Emerging Markets 2018 and received the SAM Bronze Class distinction.

The chart below depicts BTSG’s simplified business structure as of 31 March 2019.



With its subsidiary, Bangkok Mass Transit System PCL (BTSC), as the exclusive concessionaire and operator of the BTS Sky Train Core Network (Green line), its extensions and the Bus Rapid Transit (BRT) system, BTSG continues to capture the growth in demand for Bangkok’s commuting solutions. Such organic growth results from the increase in ridership as well as a thematic shift from “roads-to-rail” transportation by partaking in the Government plan to increase the size of Greater Bangkok’s mass transit network to 515.2 km by 2029.

In 2017, BTSG further expanded its mass transit network as its 75%-owned consortium BSR JV was awarded the Pink and Yellow monorail line concessions.

The chart below indicated BTSG's market share as of 31 March 2019 in the Greater Bangkok's mass transit network.

Line	Total Distance (km)	Total Stations	Operating Distance (km)	Operating Stations	Full Commercial Operation
Green (Core Network)	23.5	23	23.5	23	1999
Green (Ext. Zone 1)	12.8	11	12.8	11	2018
Green (Ext. Zone 2)	30.8	25	12.6	9	2020
BTSG network	67.1	59	48.9	43	
Total network			121.6	85	

As the awardee of the Gold line (Phase 1), Pink and Yellow line extension, BTSG's coverage will expand as follows:

Line	Total Distance (km)	Total Stations	Full Commercial Operation
Gold (Phase 1)	1.7	3	Sep 2020
Pink	34.5	30	Oct 2021
Yellow	30.4	23	Oct 2021
	133.7	116	

1.2 Market Overview of Rail Passenger Transportation

Bangkok's mass transit system is still underdeveloped compared to major cities of the developed Asian nations such as Seoul, Hong Kong, Tokyo, and Singapore. In 2017 Household Travel Survey by the Office of Transport and Traffic Policy and Planning (OTP) of the Ministry of Transport, the mass transit system serves only approximately 20% of daily commuters in Bangkok and suburban area. With limited network coverage of current mass transit rail system, this transportation mode only captures around 3% of the commuters in 2017.¹

With the aim to increase the mass transit network coverage, OTP has launched the Mass Rapid Transit Master Plan in Bangkok Metropolitan Region (M-Map) for the development of an urban rail transit network serving the Greater Bangkok area to increase the mass transit rail transport to 515.2 km in 2029.

1.3 Role of BTSG in Promoting Sustainable and Green Transportation

As part of the global determination to promote sustainable and low-carbon future, the 21st Conference of the Parties of the UNFCCC (COP21) was held in Paris in 2015 (the "Paris Agreement") which is the first step of the international collaboration journey towards sustainable development. The Paris Agreement's goals are to reduce the global warming to less than two degrees Celsius compared to pre-industrial levels and to achieve zero net greenhouse gas emissions during the second half of the 21st century.

As part of Thailand's initiatives in the global sustainable transformation, on 1 October 2015, the Office of Natural Resources and Environmental Policy and Planning (ONEP) submitted Thailand's Intended Nationally Determined Contribution² (Thailand's INDC) to reduce its greenhouse gas emissions by 20 percent from the projected business-as-usual (BAU) level by 2030 or the reduction to approximately 555 MtCO_{2e}.

On 22 April 2016, 174 countries, including Thailand, signed the Paris Agreement.

On BTSG's corporate level, promoting sustainability is the focus of BTSG's public mission. Via its mass transit low-carbon rail system and green projects development, BTSG is committed to alleviate the problem of CO₂ and greenhouse gas emissions attributable to Thailand's and global transportation sector as well as to reduce overall energy consumption.

¹ http://www.otp.go.th/uploads/tiny_uploads/DataStatistics/2562/25611012-SumData01.pdf

² https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Thailand/1/Thailand_INDC.pdf

Since the Paris Agreement, BTSG's effort in reducing energy consumption and the greenhouse gas emissions resulted in significant improvements of BTSG's Environmental Indicators and Performances.

Environmental Indicators and Performance Indicators	2014/15	2015/16	2016/17	2017/18	Target 2017/18
Total Electricity consumption per distance car-km (kWh per distance car-km)	2.74	2.77	2.72	2.68	< 2.80
Traction Power (kWh/ 1,000 passengers-km/month)	44.34	41.89	39.97	39.82	< 50
Total Electricity consumption at Train Station (Units/Day/Month)	58,391	51,362	52,291	54,435	< 62,000

Energy Consumption Indicators	2014/15	2015/16	2016/17	2017/18	Target 2017/18
Total Electricity Consumption (MWh)	102,834	103,624	102,685	106,079	107,000
- Electricity Consumption: Traction (MWh)	69,782	70,482	68,988	71,118	72,000
- Electricity Consumption: Non Traction (MWh)	33,052	33,142	33,707	34,960	35,000
Fuel Consumption: Bus Rapid Transit: BRT (Kg)	1,335,266	1,364,377	1,370,161	1,016,913	1,100,000

Green House Gas (GHG) Emission Indicators	2014/15	2015/16	2016/17	2017/18	Target 2017/18
Total GHG Emission (Tonnes CO ₂ e)	56,831	54,500	58,922	59,006	60,690
- Scope 1 (Tonnes CO ₂ e)	3,599	3,678	3,830	2,562	2,771
- Scope 2 (Tonnes CO ₂ e)	53,232	50,823	55,092	56,444	57,919

For the mass transit business, BTSC established Energy Management System Committee in 2014/15 to focus on energy related issues, responsible for determining energy conservation policy, evaluation of the ability to conserve energy, determine goals and conservation plans, audit and analyze operations to ensure goals and plans are met. The committee is also responsible for the review, analysis and addressing of inaccuracies related to energy management with the Chief Executive Officer (CEO) serving as head of the committee. Internal meetings are held every three months, with an external third party carrying out an audit and certifying the results for submission to the Department of Alternative Energy Development and Efficiency, in March of each year.

At the same time, in order to evaluate management of energy efficiency, BTSC has monitored operations based on Traction Power energy consumption indicators and electrical consumption indicators in buildings, as well as using a process to collect data and analyze irregularities in energy consumption and report findings to the Operation Performance Committee Meeting on a monthly basis.

2 Green Bond Framework

BTSG's Green Bond Framework is established in accordance with the Climate Bonds Standard version 2.1 and also adheres to the Green Bond Principles, 2018 ("GBP") issued by the International Capital Markets Association (ICMA).

The framework follows the four core components as described by the GBP:

- 1) Use of Proceeds
- 2) Process for Project Evaluation and Selection
- 3) Management of Proceeds
- 4) Reporting

2.1 Use of Proceeds

2.1.1 Eligible Green Assets

Proceeds raised through Green Bond issuances will be exclusively used to finance or refinance investments purchases, modernization, maintenance and refurbishments of Eligible Green Assets used by BTSG's and/or its affiliates.

- 1) Clean transportation, including electric mass transit and electric feeder transit, i.e. vehicle that will help mobilize passengers from mass transit to their destinations, e.g. electric taxis, electric motorbikes, etc.
- 2) Infrastructure supporting the clean transportation operations including but not limited to rail platform, support beam, rail depot and workshop facilities, electrical and mechanical systems (E&M), signaling system, and automatic fare collection system ("the supporting infrastructure")

Eligible Green Assets will also be subject to the following principles:

- 1) "Look-back period": BTSG commits on a best effort basis to allocate the Green Bond Proceeds to Eligible Green Assets pre-financed during the 24 months prior to the bond issue.
- 2) "Look-forward period": BTSG expects to allocate at least 50% of the Green Bond proceeds within the 12 months after the bond issue and to reach a full (i.e., 100%) allocation within a maximum of 24 months from the bond issue.

BTSG is committed to disclose the relevant Eligible Green Assets to be utilized for the respective Green Bond to be issued in the Green Bond Proceeds Allocation Report.

2.1.2 United Nations Sustainable Development Goals (SDG)

BTSG's Use of Proceeds shows its strong commitment to the two following SDGs:

Goal 11: Sustainable cities and communities

With the principal role of Mass Transit System in framing the direction of city expansion, as well as linking satellite suburban areas to the city center, BTSG has recognized the importance of participation at every level in the development of the city of the future, designed for living in balance and harmony. The city expansion helps facilitate more convenient urban lifestyles, which in turn forms part of the foundation for sustainable economic growth.

Goal 13: Climate action

To tackle the volatilities from the increase in energy prices and limitation of energy sources and to conform to the Paris Agreement's long-term goal to keep the increase in global average temperature to well below 2 °C above pre-industrial levels, BTSG, as a mass transit system operator with electricity as the main energy for business operation, is committed to energy efficiency management to support the environmental pollution reduction.

2.2 Process for Project Evaluation and Selection

BTSG will conduct a thorough assessment of the clean transportation and the supporting infrastructure that will be financed with the proceeds raised from a Green Bond issuance. The evaluation and selection process will comprise of three steps:

1) Evaluation

An internal team (the "Green Bond Working Group"), which is comprised of Treasury Department, Corporate Communication Department, Service Planning and MIS Department and Finance team of the project(s), will review each proposed project as per the Eligible Green Assets category and criteria listed in the section "Use of Proceeds" above.

2) Approval

The Green Bond Working Group presents Eligible Green Assets to the Executive Committee to review and approve the proposed project.

3) Board of Directors Notification

In case the Executive Committee approves the proposed project, the Executive Committee then notifies BTSG's Board of Directors of the allocation of proceeds.

2.3 Management of Proceeds

The proceeds from the issuance of BTSG's Green Bonds will be segregated into separate accounts within BTSG's finance and reporting system as well as the deposit and investments accounts held with the financial institution. The Green Bond proceeds will be mapped to and reported along the categories of investments per Use of Proceeds in 2.1 above.

- 1) Accounting team of BTSG will establish segregated accounts to disburse and track the use of net proceeds of its Green Bonds via its internal information systems on a quarterly basis.
- 2) Any balance of Green Bond proceeds not allocated to Eligible Green Assets will be held in cash or cash equivalents and highlighted in the Reporting.
- 3) Internal Audit will verify the use of Green Bond proceeds annually and until the maturity of Green Bond.

2.4 Reporting

Within one year of the Green Bond issuance, BTSG will make information available to the public on the use of proceeds on a project-by-project basis and keep it up-to-date. This will include a summary of the projects to which Green Bond proceeds have been allocated, as well as a brief description of the projects and the amounts allocated.

2.4.1 Green Bond Proceeds Allocation Reporting

BTSG will issue a Green Bond report within one year and will update it annually until Green Bond is fully allocated. The report will provide an overview of the assets financed through the proceeds of each Green Bond issuance. The report will provide the following information on the Eligible Green Assets financed:

- Summary of projects financed by Green Bond
- Summary of the allocation of proceeds raised via a Green Bond issuance to finance and/or refinance Green projects
- Summary of unallocated proceeds raised via a Green Bond issuance.

2.4.2 Impact Reporting

In addition to project-specific reporting related to the Green Bond use of proceeds, BTSG will report a qualitative summary of the specific measures, planned and carried out to reduce energy consumption and greenhouse gas emission and have overall a positive impact on the environment.

When available, BTSG will report quantitative performance measures for the Green Bond such as number of passengers using electric transportation of the projects under the Green Bond per year and amount of CO2 emission reduction per year.

All reporting will be publicly available on the section of BTSG's website dedicated to Green Bond issuance under Sustainability section until the maturity of the Green Bonds [<http://www.btsigroup.co.th/en/home>].

3 Second Opinion

BTSG engaged Sustainalytics GmbH ("Sustainalytics"), a provider of environmental, social and governance (ESG) research and analysis, to provide an independent Second Opinion on this Green Bond Framework. Sustainalytics evaluated the alignment of BTSG's Green Bond Framework with relevant industry standards within the meaning of the Green Bond Principles 2018. Furthermore, Sustainalytics assessed BTSG's sustainability strategy and the impact of the Use of Proceeds.

Sustainalytics concluded that "BTSG's Green Bond Framework is credible and impactful and aligns with the four core components of the Green Bond Principles 2018 and ASEAN Green Bond Standards 2018."

The Second Opinion is publicly available on the section of BTSG's website dedicated to its Green Bond issuance [<http://www.btsigroup.co.th/en/home>].