



BURSA MALAYSIA BONDS SDN BHD

PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES DISCLOSURE FRAMEWORK

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Responding Institution:

Bursa Malaysia Bonds Sdn Bhd

Jurisdiction(s) in which the FMI operates:

Malaysia

Authority regulating, supervising, or overseeing the FMI:

Securities Commission Malaysia

The date of this disclosure is 30 June 2019

This disclosure can also be found at:

https://www.bursamalaysia.com/trade/risk_and_compliance/pfmi_disclosure

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Abbreviations:

BCP	Business Continuity Plan
BIDS	Bond Information and Dissemination System
BM Bonds	Bursa Malaysia Bonds Sdn Bhd
Board	Bursa Malaysia Board of Directors
Bursa Malaysia	Bursa Malaysia Berhad (the exchange holding company)
CEO	Chief Executive Officer
CMSA	Capital Market and Services Act 2007
CPU	Central Processing Unit
DR	Disaster Recovery
EHC	Exchange Holding Company
ED	Executive Director
EOD	End of day
EPM	Executing Participating Members
ERM	Enterprise Risk Management
ETP	Electronic Trading Platform
GPM	General Participating Members
Group	Bursa Malaysia Group
INED	Independent Non-Executive Director
ISO	International Organization for Standardization
IT	Information & Technology
ITIL	IT Infrastructure Library
KPI	Key Performance Indicator
MGS	Malaysian Government Securities
MOF	Ministry of Finance
MYR	Malaysian Ringgit
M&A	Memorandum of Articles of Association
OTC	Over-the-counter
PFMI	CPSS-IOSCO Principle for Financial Markets Infrastructures
PID	Public Interest Director
RENTAS	Real-time Electronic Transfer of Funds and Securities System
RMC	Risk Management Committee
RMPF	Risk Management Principles & Framework
RMPG	Risk Management Process & Guidelines
RTO	Recovery Time Objective
SC	Securities Commission Malaysia
TIM	Technology & Information Management
TPM	Trading Participating Members

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I. Executive Summary

BM Bonds is a wholly-owned subsidiary of Bursa Malaysia. It is not an exchange but a recognised market operator (prior to amendments made to the Capital Market and Services Act 2007 (“CMSA”) on 15 September 2015, it was known as a registered electronic facility) registered with the Securities Commission Malaysia (“SC”) under section 34 of the CMSA.

BM Bonds is incorporated in Malaysia and provides the facility for the reporting of over-the-counter (“OTC”) trades in Malaysia, pursuant to Malaysian laws. The participants who report OTC trades to BM Bonds are locally incorporated and are subject to Malaysian laws.

This document aims to provide an overview of the relevant disclosure and explains how BM Bonds is aligned with and observes:

1. The Principles for Financial Market Infrastructure (“PFMI”) developed by the Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commission.
2. The Securities Commission Malaysia’s Guidelines on Financial Market Infrastructures.

II. Summary of Major Changes Since the Last Update of the Disclosure

This document is an update to the version dated June 2018, published as recommended by the PFMI and to continuously assist understanding of BM Bonds’ profiles as well as risk management practices. There were no major changes to BM Bonds’ organisation, services, design, rules, markets served and regulatory environment since the last disclosure.

III. BM Bonds Background Information

General Description of the FMI and the Market it Serves

BM Bonds is registered to provide, through an electronic trading platform, a facility for the secondary market trading of debt securities. The Electronic Trading Platform (“ETP”) operates side by side with the OTC market. In addition to its facility for trading, BM Bonds is also registered to provide, through the ETP, a facility for the reporting of the OTC trades. BM Bonds took over the functions of the Bond Information and Dissemination System (“BIDS”) established and operated by Bank Negara Malaysia (“BNM”). BM Bonds, in taking over the operations of BIDS, is deemed to be operating a facility where the Financial Services Act 2013 and BNM guidelines would apply.

BM Bonds is also deemed a trade repository and financial market institution under the SC’s Guidelines on Financial Market Infrastructures, by virtue of its OTC trade reporting facility.

Please refer to the daily market statistic for the basic data and performance statistic on BM Bonds at <http://www.bursamalaysia.com/market/securities/bonds/market-statistics/>

General Organisation of the FMI

As a wholly-owned subsidiary of Bursa Malaysia, BM Bonds adopted the Governance Model of Bursa Malaysia and the Group's Corporate Authority Manuals. BM Bonds has a nominal Board where its Board size has reduced to the minimum size of 2 Directors comprising members of the Management, since all major decisions are to be made at the holding company level. Information regarding the governance, ownership and board and management structure of Bursa Malaysia, including that of BM Bonds is publicly available at the website of Bursa Malaysia: www.bursamalaysia.com.

Legal and Regulatory Framework

The legal basis for BM Bond's activities is derived from the CMSA, the SC's Guidelines on Financial Market Infrastructures, the SC's Guidelines on Recognised Markets, the Rules of BM Bonds and the contractual agreement between BM Bonds and its participants.

The Rules of BM Bonds set forth sufficient information on the requirements and qualification criteria for its participants and the provisions governing the reporting of OTC transactions.

The participants of BM Bonds are subject to the rules and directives issued by BM Bonds by virtue of them having signed a Letter of Undertaking on Compliance with BM Bonds.

The Rules of BM Bonds are publicly available at the Bursa Malaysia website: www.bursamalaysia.com.

System Design and Operations

The ETP for bond market was successfully launched on 10 March 2008. The ETP is the centralised price and bond information repository and dissemination for the primary and secondary bond market.

This platform was implemented to boost transparency and liquidity as well as to increase efficiency in bond trading, in line with recommendations made in the Capital Market Masterplan, Recommendation 44 and Financial Market Masterplan. Additionally, the ETP also facilitates effective market control system for Bursa Surveillance as well as the regulators to monitor bond trading activities.

The ETP offers Trade Reporting function for OTC trades, Order Matching, Trade Negotiation, Advertisement, Announcement and Market Surveillance functionalities. The ETP also provides members with the viewing facility on Market Information. Details of these functionalities are as follows:

- Trade Reporting - a module for ETP members to report OTC trades on ETP;
- Order Matching - an automated trading module for ETP members to place order on the ETP for matching the orders according to trading algorithms;
- Trade Negotiation – a module for ETP members to place orders with a selected counterparty and the counterparty has the right to accept or reject the offer;
- Advertisement – a module for ETP members to post an indicative bid or ask quotes which can be withdrawn or modified;
- Announcement – a module where ETP members may post announcement relating to the bond market; and
- Market Information – a module where ETP members may view primary market information, turnover, highest and lowest price for stock and volume traded.

The two (2) features on Order Matching and Trade Negotiation are not used currently.

The ETP system depends on the Fully Automated System For Issuance and Tendering (“FAST”) for primary stock information for instruments available for trading on ETP. FAST is operated by BNM. The ETP system also has interfaces with other systems operated by BNM, information vendors (e.g. Reuters, Bloomberg and Bond Pricing Agency (BondWeb)).

There are three categories of participation available on the ETP:

- Trading Participating Members (“TPM”)
- Executing Participating Members (“EPM”)
- General Participating Members (“GPM”)

The Trading Participating Members are mainly commercial banks, investment banks, Islamic banks and BNM. The Executing Participating Members are money brokers and the General Participating Members include the regulators and bond pricing agency.

IV. Disclosure of 24 Principles for BM Bonds

Principle-by-principle summary narrative disclosure	
<p>Principle 1: Legal basis <i>An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.</i></p>	
Summary narrative	<p>BM Bond is a recognised market operator under Section 34 of the CMSA and is subject to regulatory oversight by the SC.</p> <p>The legal basis for BM Bond’s activities is derived from the CMSA, the SC’s Guidelines on Financial Market Infrastructures, the SC’s Guidelines on Recognised Markets, the Rules of BM Bonds and the contractual agreement between BM Bonds and its participants.</p> <p>BM Bonds is incorporated in Malaysia and provides the facility for the reporting of OTC trades in Malaysia, pursuant to Malaysian laws. The participants who report OTC trades to BM Bonds are locally incorporated and are subject to Malaysian laws.</p> <p>The Rules of BM Bonds sets out sufficient information on the requirements and qualification criteria for its participants and the provisions governing the reporting of OTC transactions, including reporting pursuant to non-routine events.</p> <p>The participants of BM Bonds are subject to the rules and directives issued by BM Bonds by virtue of them having signed a Letter of Undertaking on Compliance with BM Bonds.</p> <p>The Rules of BM Bonds are clear and formulated based on a multi-tiered internal process and procedures which include internal consultation with relevant internal stakeholders and scrutiny of proposed rules by legally qualified staff. For all rule amendments, senior management and the chief regulatory officer will review or approve the rule amendments through a management regulatory committee.</p> <p>For major rule amendments, approval is also by a board regulatory committee, comprising Bursa Malaysia’s board members who are professionals and market experts from the various related fields of the capital market.</p> <p>The Rules of BM Bonds including any amendments to it will have to go through the process of approval by the SC, except for rule changes which are editorial or consequential in nature that have been specifically exempted from the SC’s approval, before the same can be issued to the participants and public.</p>

	<p>The Rules of BM Bonds are publicly available at the Bursa Malaysia website: www.bursamalaysia.com. In addition, all participants of BM Bonds are notified of any amendments to the rules by way of circulars sent via email and made available at the Bursa Malaysia’s website. Participants are also notified via announcements on the ETP system when rule amendments are issued.</p>
<p>Principle 2: Governance <i>An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.</i></p>	
<p>Summary narrative</p>	<p>BM Bonds is a wholly-owned subsidiary of Bursa Malaysia which is an approved Exchange Holding Company (“EHC”) under section 14 of the CMSA. Bursa Malaysia is also a Public Listed Company (“PLC”) on the Stock Exchange and as a PLC, it is required to comply with the corporate governance practices as stipulated under the Main Market Listing Requirements of the Stock Exchange. As an EHC, Bursa Malaysia’s objectives are reflective of its duties and responsibilities under the CMSA. The CMSA also requires Bursa Malaysia as an EHC to ensure prudent risk management of its business and operations, and it shall prioritise public interest over its commercial business interests.</p> <p>The Governance Model of Bursa Malaysia sets out the clear and direct lines of responsibility and accountability of the Board of Bursa Malaysia, Bursa Malaysia CEO, the Board Governance Committees for the Group (i.e. Audit Committee (“AC”), Risk Management Committee (“RMC”) and Nomination and Remuneration Committee (“NRC”)); and the Board Regulatory Committees for the Group (i.e. Regulatory & Conflicts Committee, Market Participants Committee and Appeals Committee).</p> <p>As the wholly-owned subsidiary of Bursa Malaysia, BM Bonds adopted the Group Governance Model. The administration and operations of BM Bonds are carried out at the Group level.</p> <p>In this respect, BM Bonds functionally falls under the purview of the Market Operations Division of Bursa Malaysia. All heads of divisions in Bursa Malaysia including the Chief Operating Officer and Director of Market Operations of Bursa Malaysia participate in monthly meetings with the Bursa Malaysia CEO. This meeting is used for discussion on all business, strategic and operational issues.</p> <p>BM Bonds has a nominal Board (Board with minimum number of directors i.e. 2 only) as most of the functions of BM Bonds are discharged / carried out at holding company level. The Board of Bursa Malaysia has primary responsibility for the governance and management of this wholly-owned subsidiary. In addition, the Board of Bursa Malaysia</p>

oversees the functioning of the Board Governance and Regulatory Committees of the Group.

Information regarding the governance, ownership and board and management structure of Bursa Malaysia, including that of BM Bonds is publicly available at the website of Bursa Malaysia: www.bursamalaysia.com.

Currently, the Board of Bursa Malaysia consists of 8 directors, of which 3 directors are Public Interest Directors (“PIDs”) and also Independent Non-Executive Director (“INEDs”), 4 Directors are INEDs and there is one Executive Director, who is also the CEO. The 3 PIDs are appointed by the Ministry of Finance in line with the requirements under the CMSA for Bursa Malaysia to act in the public interest, having particular regard to the need for the protection of investors in performing its duties as EHC. The Chairman of the Board is also a PID.

In addition, section 10 (1) (b) of the CMSA states that no person other than a PID shall accept appointment, re-appointment, election and re-election as a director of Bursa Malaysia unless the concurrence of the SC is obtained.

The composition of the Board is governed by the provisions in the CMSA, the constitution of Bursa Malaysia and the listing requirements of the Stock Exchange. Section 10 of the CMSA provides that one-third of the directors shall be PIDs appointed by the MOF in consultation with the SC to ensure due consideration is given to public interest aspects. One-third of the directors is required to be INED. The remaining Directors are appointed by the NRC.

The Board through the NRC ensures that its composition is refreshed from time to time with new Directors having the right mix of skills / experience and diversity. The Board has in place the “Protocol for Appointment of Directors and Committee members” which sets out a clear and transparent process for Directors’ recruitment. The NRC has been tasked with the responsibility to ensure the incoming INEDs have the requisite expertise, knowledge, integrity and professionalism. Based on the annual Board composition review, the NRC would determine any possible gaps having regard to the objectives and strategic direction of the company. These gaps would be reviewed and may be translated into possible “selection criteria” for new directors in a Board refreshment exercise.

The ongoing training needs of the board members are assessed as part of the annual review of the board performance. In general, the programmes are focused on the relevant areas for examples; corporate governance, risk and compliance, the trends in global exchanges and capital markets development, cyber threats.

	<p>The Directors continued independence is assessed as part of the annual board performance evaluation, which includes a peer review by other board members.</p> <p>The recruitment process for all senior positions includes interviews with the senior management, the CEO and HOGAN & Virtual assessment. In addition, detailed reference checks are conducted. The CMSA requires Bursa Malaysia to ensure that the staff has the requisite knowledge. Bursa Malaysia has incorporated this into its Human Resources policies and ensures that all the senior management staff has all the requisite skills. Bursa Malaysia also attempts to maintain a pool of internal successors in the ratio of 1:2 for all senior and critical positions. There is a well-established performance evaluation process against KPIs for all employees. The performance of the CEO is assessed by the Board and that of the senior management by the NRC in consultation with the CEO. The performance evaluation process is used to guide the career growth and if need be any termination.</p> <p>A clear and documented enterprise risk management (“ERM”) framework at the Group level is used to identify and monitor the specific business risk for each business entity. The Risk & Compliance division ensures that Bursa Malaysia has an effective framework and ability to manage all risks as a fully integrated part of the organisation including its subsidiaries. The Risk & Compliance division reports to the RMC. Internal Audit division is independent from all other functions within the Group and reports directly to the AC.</p>
<p>Principle 3: Framework for the comprehensive management of risks <i>An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.</i></p>	
<p>Summary narrative</p>	<p>The Group has put in place an established risk management framework for managing risks affecting its business and operations which are aligned with the ISO 31000:2009 Risk Management – Principles and Guidelines and the IOSCO – PFMI as validated by an external consultant in 2017.</p> <p>The Group’s risk management framework is embedded in the Enterprise Risk Management and Principles & Framework (“ERMPPF”) document which is applicable to all the business entities within the Group such as BM Bonds. With the establishment of the ERMPPF, the accountability, authority and responsibilities of the relevant parties in the Group for managing risk, including implementing and maintaining the risk management process as well as ensuring the adequacy, effectiveness and efficiency of any controls have been clearly outlined. Within the framework, there is an established and structured process for the identification, assessment, communication, monitoring as well as continual review of risks and effectiveness of risk mitigation strategies and controls at the divisional and</p>

enterprise levels. The analysis and evaluation of Bursa Malaysia's risks are guided by the approved risk criteria.

At the Group level, the Risk & Compliance division is comprised of three key departments namely Enterprise Risk Management, Business Continuity Management and Compliance Management. The objective of the set up was to consolidate the risk management and compliance functions across the Group to provide a holistic and integrated view of risk management and compliance at the enterprise wide level. The Enterprise Risk Management department covers four risk management units namely Operational Risk, Financial Risk (including credit and liquidity risk), Strategic Risk and Legal & Regulatory Risk.

The RMC reviews the risk management aspects every quarter and tables all important developments and plans to the Board. In addition, the Internal Audit team reviews the adequacy of the risk management measures periodically. The Risk & Compliance division also conducts continual review of the risk management framework and process for improvement and ensure that they remain relevant to the Group.

Bursa Malaysia has a crisis management framework. This framework has identified four broad categories of scenarios that could significantly impair its operations: data errors, system downtimes, participant failures and operational lapses. There are various measures implemented to mitigate these risks.

A key component of the risk management measure related to the system risk is to institute Business Continuity Plans and periodically test and revise them based on new development and the test findings.

Principle 4: Credit risk

An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

Summary narrative	Not Applicable
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Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Summary narrative	Not Applicable
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Principle 6: Margin

A CCP should cover its exposure to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Summary narrative	Not Applicable
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Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Summary narrative	Not Applicable
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<p>Principle 8: Settlement finality <i>An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.</i></p>	
Summary narrative	Not Applicable
<p>Principle 9: Money settlements <i>An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risks arising from the use of commercial bank money.</i></p>	
Summary narrative	Not Applicable
<p>Principle 10: Physical deliveries <i>An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.</i></p>	
Summary narrative	Not Applicable
<p>Principle 11: Central securities depositories <i>A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.</i></p>	
Summary narrative	Not applicable
<p>Principle 12: Exchange-of-value settlement systems <i>If an FMI settles transactions that involve the settlement of two linked obligations (for example securities or foreign exchange transactions) it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.</i></p>	
Summary narrative	Not Applicable
<p>Principle 13: Participant-default rules and procedures <i>An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.</i></p>	
Summary narrative	Not Applicable

<p>Principle 14: Segregation and portability <i>A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.</i></p>	
Summary narrative	Not Applicable
<p>Principle 15: General business risk <i>An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.</i></p>	
Summary narrative	<p>BM Bonds has adopted the Group Governance Model including the Group's ERM framework to identify, assess, control, monitor and manage its general business risks.</p> <p>Amongst others, the review of the annual business plan which include financial forecast and strategic planning plays a significant role in the management of both internal and external general Business Risks of Bursa Malaysia. The risk areas relating to general business risks under the ERM framework include:</p> <ul style="list-style-type: none"> (a) Administration and operation of the Group as a business enterprise which could impair the business of Bursa Malaysia; (b) Potential risks which can cause the decline in Bursa Malaysia's revenue, growth in expenses or loss charges against capital; (c) Business impairment resulting in adverse reputational effects; (d) Poor execution of business strategy; (e) Ineffective response to competition; (f) Fluctuations in macroeconomic and market activities; (g) Ineffective talent management; (h) Lack of technology and product innovation (i) Legal and regulatory changes to the business landscape. <p>Given that BM Bonds is a wholly-owned subsidiary of Bursa Malaysia, the holding company provides a letter of financial support on an annual basis to BM Bonds in order for it to continue operations as a going concern. Bursa Malaysia also provides operational support to BM Bonds to conduct its activities. BM Bonds relies on Bursa Malaysia for continued financial support to enable it to meet its obligations as and when they fall due.</p>

<p>Principle 16: Custody and investment risks</p> <p><i>An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.</i></p>	
Summary narrative	Not Applicable
<p>Principle 17: Operational risk</p> <p><i>An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.</i></p>	
Summary narrative	<p>The Risk and Compliance of Bursa Malaysia has established an Enterprise Risk Management Principles & Framework ("ERMPF"), designed based on ISO 31000, Risk Management – Principle and Guidelines, published by the International Organization for Standardization ("ISO"). One of the risk categories classified in the ERMPF is Operational Risk which is defined as risks arising from deficiencies in information systems or internal processes, human errors, management failures, or disruptions from external events that could result in the reduction, deterioration, or breakdown of services provided by the Group. The ERMPF is supported by the Enterprise Risk Management Process & Guidelines ("ERMPG"). The ERMPG serves to guide the Group in identifying, monitoring and managing the risks it faces in the course of achieving its operations, strategic and business objectives. In the contexts of operational risk, the risk assessment process involves identifying major processes, measuring risk events in terms of likelihood of occurrence and impact and management of current mitigation controls that are in place and action plans if needed.</p> <p>The ERMPF which was approved by the Board defines the roles and responsibilities of the relevant parties including the Board, RMC and management respectively for managing risks and implementing risk management processes and ensuring the adequacy and effectiveness of risk mitigation controls. The Board have tasked the RMC with the responsibility of ensuring that the risk management framework of the Group operates effectively. Periodically, the Board will receive updates from the RMC on the progress and assessment of risk management of the Group.</p> <p>The operational risk of Bursa Malaysia is strengthened by the following frameworks, amongst others:</p> <p>(a) Operational Risk Framework:</p>

- i. A common definition and risk categories to enable a uniform understanding and consistent approach of managing operational risk across the Group;
 - ii. A governance and oversight structure for operational risk;
 - iii. Roles and responsibilities including reporting lines;
 - iv. A sound operational risk management approach and process by introducing methodologies / tools and techniques to perform risks assessment / analysis/ treatment / monitoring and reporting in a structured, systematic and consistent manner; and
 - v. Effective communication to cultivate operational risk awareness building.
- (b) Cyber Security Risk Management Framework:
- i. To create a common approach for addressing cyber security within Bursa Malaysia; and
 - ii. To ensure cyber security risks are properly managed throughout Bursa Malaysia.
- (c) Anti-Fraud, Bribery & Corruption Policy:
- i. To assist Bursa Malaysia to adopt a pragmatic approach to assess, detect, prevent and respond to fraud, bribery and corruption within the organisation.
 - ii. Bursa RCSA questionnaires explicitly probes for potential risk of fraud, bribery and corruption in Bursa staff operational activities within and with external parties.
- (d) Risk Management Framework on Outsourcing:
- i. To define the required environment and organizational components for managing outsourcing risk in a structured, systematic and consistent manner within Bursa Malaysia; and
 - ii. The framework describes three key elements for an appropriate outsourcing risk management i.e. Outsourcing Lifecycle, Risk Governance and Oversight Structure, and Risk Management Practices.

BM Bonds provides, operates and maintains an ETP for the bond market. The ETP is the centralised price and trade repository and dissemination for the primary and secondary bond market. Henceforth, the operational reliability objectives of the BM Bonds are dependable on the performance of the ETP. The ETP is being maintained regularly to ensure a high degree of security, performance, operational reliability and scalable capacity. This is achieved through IT initiatives undertaken by Bursa Malaysia's Technology & Information Management ("TIM") together with the ongoing support and maintenance arrangements with IT vendors. For instance, the performance of the ETP is measured and monitored at its average and peak CPU utilisation level. The system and the processes are subject to audit by the Internal Audit.

The ETP is able to sufficiently meet the scalable capacity adequacy to handle increasing volumes and its service-level objectives.

To ensure the reliability and availability of the ETP system, the following controls are in place:

- (a) Incident Management and Problem Management procedures are available. All incidents are centrally logged into the Enterprise Service Management system and categorised by priority. Incidents are escalated to relevant IT support teams and respective vendors with 24/7 support service for resolution.
- (b) All major components of ETP are in cluster mode at the main site and it has redundant servers at Bursa Malaysia's Disaster Recovery ("DR") Site. This is to cater for high availability and reliability of the system.
- (c) Performance of the system is monitored using specific monitoring tools which have alert capabilities to trigger alarms in the event that thresholds are being breached.
- (d) Quality assurance of the changes to the system undergoes testing by vendors and internal users. For critical and major changes, an industry wide mock testing is conducted with the market participants.
- (e) Change management process is in place where all changes to the system are centrally logged to the Enterprise Service Management system, managed and assessed in respect of impact and risk of the change to the system.

Audit engagements and independent reviews are carried out by the Internal Audit on operational systems, processes, policies and procedures based on an annual audit plan approved by the Audit Committee. All key operational areas and processes are audited within a cycle of 3 years with higher frequency of coverage depending on its criticality and Internal Audit's risk assessment. Using a risk-based audit approach, Internal Audit assesses the selected areas under the audit scope in relation to effective mitigation of risk exposures, compliance towards the approved policies and procedures and relevant laws and regulations as well as improvement to the overall internal control system. As part of the risk-based audit plan, Internal Audit also conducts system readiness reviews to ensure that due process has been complied with prior to the implementation or launch of significant systems development and enhancement projects. Post implementation reviews are also conducted after a predefined period to assess the realised benefits of the implemented significant systems and projects.

Physical and information security and policies are in place to ensure the confidentiality, integrity and availability of information and systems. The policies encompass areas of governance, identification, protection, detection, and recovery controls for the organisation.

Bursa Malaysia have implemented appropriate protective controls to minimise the likelihood and impact of a cyber-attack on critical business functions and information assets.

The controls for physical and logical access are the following:

- (a) Entry into data centers and sensitive areas are controlled using combination of access cards and security identification codes and restricted only to authorised personnel.
- (b) Super IDs or privilege-IDs are controlled and managed by privilege-ID management system.
- (c) System and data owners identified and access matrix defined; access to confidential and restricted information on need-to basis and upon approval.

On 29 April 2019, the Cyber Security Strategy Roadmap (CSSR) was formalised. The CSSR is a 3-year (2019-2021) roadmap and actions designed to continuously improve the cyber security preparedness and resilience of Bursa Malaysia's infrastructure and services. This is in line and to support the overall business strategy and business plans of the Bursa Malaysia Group.

Bursa Malaysia has invested and put in place tools and mechanisms to enhance the cyber resilience capabilities to anticipate, withstand, contain and rapidly recover from a cyber incident with the objective of limiting the escalating risks that cyber threats pose to Bursa Malaysia and its stakeholders. Amongst the controls that have been put in place are:

- (a) Vulnerability assessment and penetration test conducted to identify security vulnerabilities in system and appropriate remedial actions taken to address any weaknesses. In addition, Vulnerability Assessment Tool was refreshed to enable detection of potential vulnerabilities automatically and safeguard the systems from potential threats from those vulnerabilities.
- (b) Firewall and network intrusion prevention system in place to monitor, detect and mitigate malicious activity or suspicious traffic on the network. Security Components was put in place to refresh Firewalls, LAN Access Control Servers with the latest technologies and capabilities to ensure the network is safe from any intrusion of unauthorised access that connects to Bursa Malaysia network.

- (c) Re-designed staff Internet access to use a separate Network Firewall and Broadband line to minimise Internet bandwidth contention during peak utilisation for business application / traffic and to prevent cyber-attack.
- (d) Anti-virus software implemented for all desktops, servers, email exchange and gateway.
- (e) Information leakage control to avoid unauthorised access and data leakage.
- (f) Independent consultant to conduct Social Engineering Test to evaluate staff awareness in identifying scam (e.g. email phishing and physical tailgating test), granting access permission to restricted areas and sharing of sensitive information.
- (g) External professional to conduct source code review for in-house developed software to provide comprehensive assurance that Bursa Malaysia’s application is secured in terms of application flaw.
- (h) Established Bursa Malaysia Computer Emergency Response Team (“BMCERT”). The BMCERT is aimed to elevate the operational improvement and instil a culture of cyber risk awareness on incident response to cyber threats.
- (i) Participated in the Capital Market Cyber Drill Simulation (CMCDS) organised by the SC in October 2018. Bursa Malaysia was identified as a key participant to participate in the CMCDS with the aim to strengthen the market preparedness in responding and recovering from potential cyber incidents. It is crucial for Bursa Malaysia to remain vigilant and maintain visibility on cyber preparedness and resilience. Bursa Malaysia was categorised in the top 25 percentiles among 38 organisations that participated in 2018 CMCDS.

The tools and mechanisms are reviewed and assessed to observe with the Guidance on Cyber Resilience for Financial Market Infrastructures issued by IOSCO as well as to comply with the Guidelines on Management of Cyber Risk issued by the SC.

In relation to BM Bonds operations, the following are put in place:

Business Continuity Plan (“BCP”)

The overall approach is geared towards to ensure adequate back-up arrangements for all critical office facilities and system components; online data replication from the main site to

the DR site and data back-ups to ensure no data loss; and developing business continuity procedures and testing them periodically. The failure of the critical system components is mitigated with clustering and redundant systems/infrastructure facilities at the Bursa Malaysia's main site, hence minimising the needs to failover to the Bursa Malaysia's DR site/systems. The systems at the Bursa Malaysia's DR site are capable of running all the functionalities that are currently available at the main site.

Alternate Site and Backup Systems and Office Facilities

The Group's back-up systems and office facilities are housed in its own DR site which is away from the main site. These two different sites are provisioned from different power substations and different telecom exchanges for electricity supply and telecommunication services respectively, to mitigate the risk of concurrent impact to both sites. The DR site is having adequate capacity and as part of the annual BCP testing has been found to be capable of handling the operations for a sustained period of time.

BCP and Testing

The Group has a comprehensive group wide BCP plan. The BCP is tested annually with the participation of all stakeholders with target RTOs of 2 to 4 hours. The BCP test includes participation of the BM Bonds participants, they are required to connect to the Bursa Malaysia's DR site and verify their ability to conduct their usual services and the integrity of their data. Appropriate recalibration of the BCP are made and if required these are re-tested. Procedures in the BCP for mitigating business interruption risks are tested at least once a year. These procedures are also subjected to external audits by the SC and the appointed external auditor of Bursa Malaysia.

BM Bonds's Workflow and Recovery Time Window

BM Bonds business (production) hours are from 9:00 a.m. to 6:00 p.m., Monday to Friday except on public holidays and other market holidays (when the Exchange is declared closed).

BM Bonds market trading hours are stipulated as follows:

Morning session : 9:00 a.m. to 12:30 p.m.

Afternoon session : 2:30 p.m. to 5:00 p.m.

For trade reporting, the sessions are as follows:

Morning session : 9:00 a.m. - 1:29 p.m.

Afternoon session: 1:30 p.m. - 5:45 p.m.

	<p>For trade confirmation, the hours are as follows: Morning session: 9:00 a.m. - 12:30 p.m. Afternoon session: 2:30 p.m. - 6:00 p.m.</p> <p>BM Bonds operations conduct its activities i.e. creation or deletion of user identifications, updating of user information and amendments to reported transactions during these hours. Although ETP is a trading platform, the system is currently used by the participating members to do OTC trade reporting only. Any disruption to the process, participating member must manually report the Off ETP transaction to BM Bonds by sending the details of the Off ETP transaction to BM Bonds by facsimile as prescribed by BM Bonds so that the same may be keyed into the ETP by BM Bonds on their behalf.</p> <p>Clearing and settlement of bonds is done outside BM Bonds i.e. through the RENTAS of BNM.</p> <p>BM Bonds end-of-day (“EOD”) starts from 6:30 p.m. to 2:30 a.m. The EOD job is executed automatically after receiving the BNM EOD indicator. During the EOD process, all transactions and related market tables will be initialised and stock master reconciliation report is generated and transmitted to BM Bonds Operations on the next business day.</p> <p>Recovery Time Objective (“RTO”) and BCP Test Results</p> <p>The ETP is classified as critical system with RTO of 4 hours. The recovery time achieved for an intraday failure scenario including the staff mobilization and travelling time to DR site for the ETP system for year 2018 BCP test was 1 hour 45 minutes.</p> <p>Market Participant's DR Site, BCP and Testing</p> <p>In addressing the risks of key participants may pose to its operations, Bursa Malaysia requires all participants to maintain robust BCP and the participants are also required to participate in the BCP tests of the Bursa Malaysia.</p>
<p>Principle 18: Access and participation requirements <i>An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.</i></p>	
<p>Summary narrative</p>	<p>Access policies and requirements are clear, objective, risk-based and transparent with specific requirements of the individual institutions being addressed in the specific rules and regulations.</p> <p>There are three types of membership of the BM Bonds – TPM, EPM and GPM.</p>

	<p>The rules on membership requirement of the BM Bonds can be found under chapter 3 of the Rules of BM Bonds. There is no financial requirement for members of BM Bonds. TPMs are essentially licensed financial institutions while EPMs are money brokers. GPM is open to any person or corporation.</p> <p>BM Bonds does not impose any registration /entrance fee or monthly/annual fees on its participants.</p> <p>Criteria and requirements for participation are as per stated under the rules and are applicable to all applicants without discrimination, exception or exclusion. Participation as member of BM Bonds therefore is open to all eligible applicant who meets the stipulated criteria and requirements. The Rules of BM Bonds are available at the Bursa Malaysia website.</p>
<p>Principle 19: Tiered participation arrangements <i>An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.</i></p>	
Summary narrative	Not applicable.
<p>Principle 20: FMI links <i>An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link related risks.</i></p>	
Summary narrative	Not Applicable.
<p>Principle 21: Efficiency and effectiveness <i>An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.</i></p>	
Summary narrative	<p>BM Bonds provides efficient and effective services to its participating members and has implemented an appropriate process of obtaining feedbacks and inputs from the participating members. These are reflected in the goals and objectives of BM Bonds, amongst others to:</p> <ul style="list-style-type: none"> (a) ensure smooth operation of the ETP system; (b) provide support to all stakeholders to ensure uninterrupted access to the ETP system and its related functionalities and services; (c) ensure effective flow of primary market data from BNM and secondary market trading data to the relevant stakeholders; and

	<p>(d) facilitate ETP system testing which include BCP testing between Bursa Malaysia and its internal and external users.</p> <p>BM Bonds has identified and established risk profile for all potential risks related to its operations or activities and provides control to mitigate the risks. This risk profile is reviewed on a quarterly basis to ensure the effectiveness of the control that were put in place.</p> <p>BM Bonds has service level agreement with the vendor and it is being reviewed on quarterly basis. This is to ensure the vendor provides permanent and/or work around solutions for issues reported by BM Bonds within the agreeable timeline as stipulated in the agreement. BM Bonds obtains feedback via email communication or site visits to participant’s premise.</p> <p>Industry consultation is conducted with the participants, the SC and BNM prior to introduction of any changes to Rules and/or system enhancements. BM Bonds also performs post implementation review for initiative that has been implemented by obtaining feedback from the participating members and conducts regular meetings to discuss on the issues raised.</p> <p>In addition, BM Bonds has identified and established the following targets for key operational indicators to ensure it continues to observe and achieve an efficient and effective level in discharge its duties:</p> <ul style="list-style-type: none"> (a) Time taken to disseminate data to relevant parties/authorities; (b) Adherence to procedures/rules; and (c) System availability.
<p>Principle 22: Communication procedures and standards <i>An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.</i></p>	
<p>Summary narrative</p>	<p>BM Bonds uses a proprietary message format to interface with its users (internal and external) that includes participating members, the SC and BNM. BM Bonds also uses other types of messaging and file format of the industry standard protocols i.e. FIX to interface with information vendors and Market Message Transfer Protocol (“MMTP”) with BNM.</p>

Principle 23: Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks and fees and other material costs they incur by participant in the FMI. All relevant rules and key procedures should be publicly disclosed.

Summary narrative

The Rules of BM Bonds sets out sufficient information on the requirements and qualifying criteria for its participants and the provisions governing the reporting of OTC transactions, including reporting pursuant to non-routine events.

The Rules of BM Bonds are clear and formulated based on a multi-tiered internal process and procedures which include internal consultation with relevant internal stakeholders and scrutiny of proposed rules by legally qualified staff. For all rule amendments, senior management and the chief regulatory officer will review or approve the rule amendments through a management regulatory committee.

For major rule amendments, approval is also by a board regulatory committee, comprising Bursa Malaysia Berhad's board members who are professionals and market experts from the various related fields of the capital market.

The Rules are publicly available at the Bursa Malaysia's website: www.bursamalaysia.com. In addition, all participants of BM Bonds are notified of any amendments to the Rules via circulars sent vide email. The circulars are also made available at the Bursa Malaysia website. Any amendments to the Rules will be approved by the SC.

The operational procedures in the form of ETP User Manual is provided to the participants of BM Bonds through electronic mail (e-mail). Participants can also refer to FAQs on Electronic Trading Platform ("ETP") for Bond which is available on Bursa Malaysia website. Daily and monthly market statistics on bonds are also published on Bursa Malaysia website.

Principle 24: Disclosure of market data by trade repositories

A trade repository should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Summary narrative

BM Bonds provides bond market data to relevant authorities i.e. BNM and SC. Participating members and authorities are given access to the system for the online market data information. In addition, daily summary reports of Off ETP transactions reported on ETP are provided to the SC and BNM twice a day as guided by the procedures. Information vendors that subscribed the bond data feed receive the feed through the FIX interface.

As for the public, selected reports are published on daily basis at the Bursa Malaysia's website. These reports provide information on active stocks transacted, highest price stocks, securities turnover, benchmark stocks and outstanding amount of MGS.

The ETP system is accessible from 9:00 a.m. to 6:00 p.m. The participating members including authorities the SC and BNM have direct access to the primary and secondary market data available on the system. Access to the system are given to the users of the participating members based on the application made and authorised by the participating members.

Additional and ad-hoc data requested by the authorities, namely the SC are extracted from the system or downloaded from the Business Object and given in the format as requested by the SC in a timely manner as stipulated and guided by the procedures. The data are sent through email to the SC.

Accuracy of data is ensured by the parties involved in the Off ETP transaction. The initiator i.e. the participating member keys in the Off ETP transaction into the ETP and the counter party is required to check and confirm the transaction.

ETP users are able to access one year of the most recent data via the ETP user interface, however, seven (7) years of the most recent data is stored in the ETP Oracle database.

V. List of Publicly Available Resources

Relevant information pertaining to BM Bonds can be found at:

<http://www.bursamalaysia.com/market/securities/bonds/>

Links to documents referenced within this Disclosure Framework are below:

Capital Markets and Services Act 2007

<https://www.sc.com.my/regulation/acts/capital-markets-and-services-act-2007>

Circulars

https://www.bursamalaysia.com/regulation/bonds/rules_of_bursa_malaysia_bonds

Corporate governance model

https://www.bursamalaysia.com/about_bursa/about_us/corporate_governance/governance_model

Rules of BM Bonds

https://www.bursamalaysia.com/regulation/bonds/rules_of_bursa_malaysia_bonds

Market statistics

https://www.bursamalaysia.com/market_information/market_statistic/bond

Products information

https://www.bursamalaysia.com/trade/our_products_services/bonds/exchange_traded_bonds_and_sukuk