



# **Principles for Financial Market Infrastructures DISCLOSURE**

**May 2019**

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**Responding Institution:** Dubai Commodities Clearing Corporation (“DCCC”).

**Jurisdiction in which the FMI operates:** United Arab Emirates (“UAE”).

**Authority regulating, supervising or overseeing the FMI:** The Securities and Commodities Authority (“SCA”).

**The date of this disclosure is 1 May 2019.**

This disclosure can be also be found at [www.dccc.com](http://www.dccc.com). For further information, please contact DGCX Group Compliance at: [compliance@dccc.ae](mailto:compliance@dccc.ae) .

## Glossary of Terms

BCP	Business Continuity Plan
CEO	Chief Executive Officer
CCP	Central Counterparty
CPSS	Committee on Payments and Settlement Systems
DCCC	Dubai Commodities Clearing Corporation
DFSA	Dubai Financial Services Authority
DGCX	Dubai Gold and Commodities Exchange
DGCX Group	DCCC and DGCX
DIFC	Dubai International Financial Centre
DIFC-LCIA	Dubai International Financial Centre and the London Courts of International Arbitration
DMCC	Dubai Multi Commodity Centre
DMP	Default Management Procedures
DRC	DCCC Risk Committee
EXCOM	DCCC Executive Committee
ERM	Enterprise Risk Management
ESMA	European Securities and Markets Authority
EWMA	Exponentially Weighted Moving Average
FIX	Financial Information Exchange
FX	Foreign Exchange
IOSCO	Technical Committee of the International Organisation of Securities Commissions
IT	Information Technology
LST	Liquidity Stress Testing scenarios
PFMI	Principles for Financial Market Infrastructure
Rules	Rules of DCCC
SITG	Skin-in-the-Game
SLA	Service Level Agreement
SPAN®	Standard Portfolio Analysis of risk
SWIFT	Society for Worldwide Interbank Financial Telecommunication
UAE	United Arab Emirates

## I Executive Summary

DCCC has completed its self-assessment against the internationally recognized “Principles for Financial Market Infrastructure” (“PFMI”) published in February 2012, and developed jointly by the Committee on Payments and Settlements Systems (“CPSS”) and the Technical Committee of the International Organisation of Securities Commissions (“IOSCO”). DCCC’s approach to observing each applicable principle set out in CPSS-IOSCO’s PFMI is summarized in this Disclosure Document. This document is reviewed and approved by DCCC’s EXCOM and is regularly updated.

DCCC is part of the DGCX Group, and was established in 2005. DCCC’s registered office is at: 37<sup>th</sup> Floor (UP), Gold Tower, Cluster I, Jumeirah Lake Towers, PO Box 37736, Dubai, United Arab Emirates. DCCC’s operations are provided from its registered office. DCCC was formed to provide clearing services to the Dubai Gold and Commodity Exchange (“DGCX”), and clears all transactions executed on the DGCX. These clearing services, as at the date of this self-assessment, comprise of currency, energy, equity and metal exchange-traded derivative futures and options contracts.

DCCC is wholly-owned by DGCX, which is in turn a wholly-owned subsidiary of the Dubai Multi Commodity Centre (“DMCC”). DMCC is a strategic initiative of the Government of Dubai, which regulates, promotes and facilitates trade across a range of commodities.

DCCC is regulated by the Securities and Commodities Authority (“SCA”) of the United Arab Emirates (“UAE”), to conduct clearing and settlement activities in accordance with relevant SCA regulations. DCCC has been authorised as a Third-Country CCP by the European Securities and Markets Authority (“ESMA”), In addition, DCCC is allowed to conduct and settlement activities for transactions executed on the DGCX by institutions established in the Dubai International Financial Centre (“DIFC”), which are regulated by the Dubai Financial Services Authority (“DFSA”).

## II General Description

General description of (a) DCCC, (b) the market it serves, and (c) key metrics.

- (a) DCCC is wholly-owned by DGCX, which is in turn a wholly-owned subsidiary of the Dubai Multi Commodity Centre (“DMCC”). DMCC is a strategic initiative of the Government of Dubai, which regulates, promotes and facilitates trade across a range of commodities. DCCC is regulated by the SCA of the UAE, to conduct clearing and settlement activities in accordance with relevant SCA regulations.

DCCC has been authorised as a Third-Country CCP by the ESMA. In addition, DCCC is allowed to conduct clearing and settlement activities for transactions executed on the DGCX by institutions established in the DIFC, which are regulated by the DFSA.

DCCC utilises the services and functions of DGCX with regard to HR, Finance, IT and general office administration. For each of these the relevant DGCX team works collaboratively with DCCC and relevant external parties (e.g. Clearing

Member firms) to ensure that the services provided meet the intended business requirements. In addition, with respect to Legal and Internal Audit functions, these services are provided to both DCCC and DGCX by DMCC, and the same operating principles apply.

As a CCP, DCCC interposes itself as a buyer to every seller, and a seller to every buyer of both sides of every transaction that it clears and settles. Its systems are designed to protect the financial integrity of the market for which it acts as CCP by maintaining collateral, facilitating payments and collections, and limiting counterparty risk. Positions are marked-to-market at least four (4) times throughout the day. DCCC maintains a comprehensive set of rules and policies in addition to customer protection, risk management and governance frameworks.

- (b) DCCC currently provides clearing and settlement services to DGCX, and these services include:
- (i) Trade registration and management;
  - (ii) Position management, margin and collateral;
  - (iii) Treasury, cash payment/receipt and billing;
  - (iv) Clearing risk management;
  - (v) Default management; and
  - (vi) Contract expiry and deliveries.

DCCC accepts transactions on the basis of an open offer mechanism for transactions executed on DGCX, pursuant to which contracts arise automatically upon matching of an open buy order with an open sell order. Whenever a Contract is recorded in a Customer Account of a Clearing Member, a back-to-back transaction between the Customer and the Clearing Member with equal terms will also arise between the Clearing Member and its Customer. The liabilities and obligations of DCCC will extend only to, and be enforceable only, by Clearing Members.

DCCC's clearing systems (described below) receive details of trades in a real-time basis from DGCX. DCCC only receives validated data in relation to matched trades, and DGCX's trading system is designed to ensure that only details of matched trades are passed to DCCC for clearing.

Clearing Members have rights and obligations set out in the Rules and Letter of Undertaking, and every Clearing Member agrees to be contractually bound by the Rules as a result of becoming a Clearing Member.

DCCC has implemented a comprehensive Enterprise Risk Management ("ERM") policy which is designed to ensure, amongst other things, the financial performance of all transactions that are cleared and settled by it. The ERM identifies six main areas of risk: strategic; operations; reporting; compliance; and reputational. Within each area individual risks are assessed, with an appropriate response provided and control measures are in place to ensure that the responses are undertaken, and an overall monitoring programme is also in place to assess the presence and functioning of the individual components within the ERM.

This creates a strong risk management culture of awareness and transparency that operates as part of a “3 lines of defence” model that encourages management responsibility along with challenge from a strong second line and periodic review by the Internal Audit function. This latter service is provided to DCCC by DMCC.

- (c) DCCC cleared approximately 89,000 lots per day in 2018, and as at 31 March 2019, held approximately US\$147.2m in collateral.

DCCC monitors, on an intraday/daily basis, the amount of collateral that it holds together with its potential exposure to Clearing Members. In the event of a default, the following resources are available to DCCC in order that it can continue to meet its obligations to non-defaulting Clearing Members:

- (i) the defaulting Clearing Member’s initial margin (including any other collateral placed with DCCC);
- (ii) the defaulting Clearing Member’s contribution to the Default Fund;
- (iii) DCCC’s own capital contribution (“the Skin-in-the Game”); and
- (iv) the Default Fund of the non-defaulting Clearing Members.

DCCC monitors the amount of its own resources to meet regulatory requirements, and has incident recording and reporting processes to track, in particular, the resilience of its systems and processes.

## Principle 1: Legal basis

***An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.***

### **Summary narrative**

DCCC is wholly-owned by DGCX, and was formed in 2005 as a limited liability company under the DMCC authority free zone. DCCC provides clearing and settlement services to DGCX, which is authorised and regulated by SCA.

DCCC is regulated by SCA, and in addition is authorised as a Third-Country CCP by ESMA. Further, DCCC is allowed to conduct clearing and settlement activities for transactions executed on the DGCX by institutions established in the Dubai International Financial Centre (“DIFC”), which are regulated by the Dubai Financial Services Authority (“DFSA”).

DCCC’s Clearing Rules, which are publicly available on DCCC’s website, are governed by the laws of the UAE as applicable in the Emirate of Dubai. In the event of a dispute as to the applicable jurisdiction, the matter shall be referred to arbitration in accordance with the Dubai International Finance Centre and the London Court of International Arbitration (“DIFC-LCIA”).

The following are the material aspects of DCCC’s activities that require a high degree of legal certainty:

- Legal enforceability, default fund contributions, contracts, fees, and other payment obligations;
- Settlement and delivery of futures contracts and detail around options contracts;
- Clearing Rules, including Default Rules (and post-insolvency netting provisions);
- Terms of cleared products; and
- Enforceability of disciplinary and dispute provisions.

Each Clearing Member agrees to be bound by the Clearing Rules by signing the Letter of Undertaking upon admission as a Clearing Member of DCCC, and in so doing agrees to abide and comply with the Rules.

DCCC has a close working relationship with its regulator, SCA, and engages actively with its Clearing Members, and as new issues are identified are addressed, where appropriate, through changes to the Rules. The Rules are subject to public and regulatory consultation and governance requirements, with a minimum period of fourteen (14) days prior notice to market participants prior to the effective date of any changes. The consultation process ensures that SCA and Clearing Members have the opportunity to consider and challenge the proposed rules or arrangements, including with respect to enforceability in specific jurisdictions.

The legal basis for DCCC’s activities is articulated through regulatory approval with SCA, and the sole jurisdiction in which DCCC operates is that of the UAE. In addition to the

SCA regulations, UAE Federal Decree-by-Law Nos. (10) (“Regarding Netting”), which came into effect on 30 October 2018, enshrined in law the principles of, amongst other things, daily netting, and post-insolvency netting (“close out netting”). These principles, as they relate to the activities of DCCC provided a statutory guarantee of the effectiveness of the relevant parts of the DCCC Clearing Rules.

## Principle 2: Governance

***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.***

### Summary narrative

DCCC’s principal activity is the provision of clearing and settlement services to DGCX, and its clearing strategy is designed to complement the market which DGCX operates while meeting the risk management, capital and regulatory requirements of the marketplace. DCCC clears, settles, and guarantees the financial and physical delivery performance of futures contracts and options on futures contracts. The strategy of DCCC is based on the following objectives:

- Safeness and security – sound operational and risk management systems, models and procedures developed to meet the needs of the users.
- Servicing the market – products and services tailored to the needs of the users.
- Regulatory adherence – development and maintenance of best practise and standards including, but not limited to active participation in industry standard-setting bodies such as IOSCO and CCP12.

In implementing this strategy, DCCC seeks to ensure that no new product or service adversely impacts existing operations or takes priority over any mandatory regulatory requirement. The DCCC Board is actively involved in overseeing DCCC’s performance against its objectives and business risks as part of standard governance process. DCCC also has a robust ERM framework which is also subject to oversight from the DCCC Board to ensure that the pursuit of strategic objectives does not conflict with the risk appetite of DCCC. DCCC’s governance arrangements and the ERM are designed to promote its safety and efficiency and support the stability of the financial system in which it operates, other relevant interests, and the objectives of relevant stakeholders.

The constitution of DCCC is set out in its Memorandum and Articles of Association, and its Board comprises of four (4) Directors<sup>1</sup>, none of whom have executive roles within DCCC, and one of whom is an Independent Board Director. These Directors are appointed based on skills and experience commensurate to DCCC’s needs and legal and regulatory requirements. Directors are required to make declarations with regard to conflicts of interest, and to make themselves aware of relevant disclosure obligations.

The DCCC Board has delegated day-to-day operational control to the Chief Executive Officer (“CEO”) and the Executive Committee of DCCC. In addition, and to ensure both

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<sup>1</sup> As at 31 March 2019.

oversight and independence, the risk and compliance functions are required to report to the Board separate to any reporting undertaken by the CEO. The DCCC Board has also provided for the establishment of the DCCC Risk Committee (“DRC”), which has its own Terms of Reference that sets out its roles and responsibilities.

In addition, the internal audit function is undertaken by DMCC Internal Audit, governed by a separate agreement between the parties, and which also reports separately to the DCCC Board.

Accountability to owners, participants and other relevant stakeholders is achieved through several methods, such as: the DCCC Board, including three (3) ultimate shareholder representatives; the DRC including a representative from a Clearing Member; and Rule changes being consulted with Clearing Members, other market participants and SCA, as appropriate. Decisions affecting Clearing Members are notified by Notice and posted on the DCCC website. The decisions of the DCCC Board and the DRC are formally documented, reviewed and subsequently approved. Formal notifications to SCA concerning material changes and Rule amendments are made in accordance with relevant requirements.

DCCC has a low appetite for risks that threaten the safety and efficiency of its operations, achievement of its business objectives and the stability of the financial system as it relates to the activities of the DCCC. However, it is recognised that incidents do occur and DCCC has defined performance thresholds and levels of tolerance beyond these thresholds, for specific categories of risk (e.g. Financial Risk, Operational Risk, Legal and Regulatory Risks and Business Risks). Once set, these thresholds and tolerance levels guide and inform the setting of appropriate risk appetite metrics. These are subject to regular review along with DCCC’s policies, procedures and controls to ensure that they are consistent with its risk tolerance and appetite.

### Principle 3: Framework for the comprehensive management of risks

***An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.***

#### Summary narrative

DCCC has a comprehensive ERM framework, which includes a risk appetite statement and a commitment to manage risk. It has also put in place robust risk governance processes, as well as policies, procedures and controls that help to identify, measure, monitor and manage the risks that arise in or manifest themselves as a result of DCCC's operations. The key policies and procedures include, but are not limited to the following:

- ERM framework – identifies, assesses risk, detailing controls for each, and how these are managed.
- Business Continuity framework – this specifies DCCC's overriding business continuity planning, which are designed to ensure timely recovery of operations and fulfilment of clearing obligations and effective coordination among affected parties during a business continuity event.
- Clearing Rules – every Clearing Member agrees to be bound by the Clearing Rules as a result of becoming a Clearing Member.

DCCC uses a risk taxonomy to define the types of risk which it is exposed to, and covers such things as:

- Business risk (e.g. revenue, reputational and regulatory evolution risk);
- Daily processing (e.g. fraud, employment practices, staffing, business disruption and systems failure risks); and
- Regulatory risk (e.g. enforceability risk and regulatory compliance).

The DRC regularly reviews the ERM, including Clearing Membership requirements, margin parameter settings and sensitivity analysis, default management procedures, analysis of Default Fund requirements, collateral management, counterparty risk reviews, liquidity analysis and stress scenarios.

DCCC's risk management procedures and systems support the underlying policy framework and set out internal procedures and control activities to ensure that DCCC's risk exposure is adequately managed. DCCC's policy governance and review process consists of, but is not limited to, the following key aspects:

- The number and complexity of the policies and procedures have been designed to match the risk appetite of DCCC and the level of regulatory requirements;
- The process for developing and approving risk management policies is formally documented;
- Policy owners are accountable for setting policy and ensuring it is communicated and understood throughout DCCC as appropriate; and
- Policies are subject to formal review by DRC.

DCCC also keeps abreast of industry best practices, and regulatory and market developments. DRC and the DCCC Board are updated regularly, as appropriate, on the outcome of these reviews and action plans to be undertaken.

The DCCC risk management policies, procedures and control systems are reviewed at least annually. DCCC's senior management is responsible in the first instance for identifying, measuring, monitoring, managing and reporting fluctuations in risks, changing environments and market practices. The second and third lines of defence (i.e. compliance and audit) are responsible for keeping the ERM framework under review and reporting to senior management and the DCCC Board as required and appropriate, taking into account historical market experience, forward-looking market indicators, material changes to Clearing Members' portfolio composition, and other relevant factors.

DCCC provides information to Clearing Members and, where relevant, to their customers to enable them to manage and contain the risks they pose to DCCC, including: the issues identified in membership applications and from ongoing membership oversight and due diligence; SPAN parameters and access to the methodology.

The incentives provided by DCCC to Clearing Members and their customers to monitor and manage the risks they pose to DCCC include: margin and Default Fund requirements (see Principle 4); membership criteria; and Clearing Member Rules. The DRC includes representation from Clearing Members.

Material risks that DCCC bears from and poses to other entities are considered and measured as part of the ERM framework. Key sources of such risks, including counterparty credit risk, wrong way risk, liquidity risk, investment risk, custodian risk, supplier risk, concentration and operational risk (which includes amongst others business continuity and information technology risks) are considered as part of routine risk assessment processes as well as emerging risk assessments.

DCCC identifies financial institutions on which it relies to effect settlement of cash, securities and physical transactions. For example, DCCC has established a network of Clearing Banks, and in addition, DCCC has dependencies on: infrastructure and service providers (see Principle 17 - Operational Risk). DCCC employs tools such as due diligence on third-party providers, legal arrangements, and rights to access information on third-party providers to address the material risks arising from interdependencies with other entities.

DCCC maintains a Recovery & Resolution policy which sets out the actions and steps that would be taken to recover DCCC to a viable condition in the event that it came under severe financial stress; and to maintain effective arrangements for ensuring losses that threaten DCCC's solvency are allocated. DCCC has adopted a risk-based approach to evaluate the effects of default and non-default losses, which is documented in the Recovery & Resolution policy. This risk-based scenario analysis consists of different impact categories and severity levels and provides the basis by which different types of stress scenarios are assessed.

The scenarios within DCCC's Recovery & Resolution policy take into account independent and related risks to which DCCC is exposed to, including: significant default

and non-default losses and liquidity shortfalls; suspension or failure of DCCC's critical services, business functions and technology systems and infrastructure; and damage to other market infrastructure, with consequential uncertainty in the markets for which DCCC clears. The Recovery & Resolution policy identifies the tools that would be used by DCCC in such circumstances and the decision-making and governance around the use of such tools. It builds on DCCC's established default management, ERM, and business continuity frameworks. It also reflects relevant provisions within the Rules. The Recovery & Resolution policy is reviewed and revised annually by the DRC.

## 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

Credit Risk Management Framework.

DCCC's risk management infrastructure is structured specifically to ensure robust clearing arrangements whilst also minimising risks for Clearing Members. DCCC has developed a comprehensive approach to systemic risk management, comprising of the following:

- Membership criteria and on-going monitoring;
- Initial Margin calculation and call/collection;
- Variation Margin call/settlement;
- Intraday Monitoring and additional margin calls;
- Default Fund contribution; and
- Powers of replenishment.

DCCC also accounts for position concentration risk and highlights Clearing Members that require close monitoring.

The day-to-day management of credit risk posed to DCCC by Clearing Members and the monitoring of exposures against limits is the responsibility of the Clearing Operations & Risk Department. As DCCC operates a gross margin up-front model, so the limits on the size of open positions that Clearing Members are able to hold are calculated on a near real-time basis, and are applied automatically. The Finance Department monitors the activities of DCCC's investment agents and custodians and monitors exposures against limits.

DCCC management has established risk governance processes to ensure new products, services and potential risks are appropriately assessed and governed. The Treasury Policy is designed to ensure with a high level of confidence that DCCC is able to effect payment and settlement obligations in all relevant currencies as they fall due, including, where appropriate, intraday. The Treasury Policy is maintained by the Finance Department, and is formally reviewed and updated at least bi-annually.

Risk Management Tools (identify, measure and monitor): DCCC uses its ERM framework (see Principle 3) to ensure that sources of risk are identified, mitigated and that the process of identification and mitigation is scrutinised.

DCCC has employed a range of methods to monitor and measure credit risk, such as daily monitoring of breaches/exceptions in Clearing Member performance measures; annual reviews of Clearing Members' financial position and membership requirements; and uses financial data submitted by Clearing Members.

Tools used to control identified sources of credit risk and how the effectiveness of these tools is measured are as follows:

- All positions are marked-to-market daily and four (4) times intraday to control Clearing Member credit exposure;
- Intraday margins are recalculated to reflect an overall change in intraday liability of the Clearing Member;
- Controls are in place with regards to concentration charge, wrong way risk charge, delivery charges, and collateral haircuts; and
- Review and assessment upon the on-boarding of a new Clearing Member, followed by ongoing review.

The Margin Methodology Policy and Collateral Policy sets out the arrangements by which DCCC considers the eligibility of specific assets for inclusion as permitted collateral and the appropriate valuation and haircut procedures.

**Margin:** DCCC covers its current and potential future exposures to each Clearing Member by the following:

- The Rules require that Clearing Members prefund Initial Margin and Default Fund contributions within agreed timescales to cover potential future exposures.
- The Rules also require that Clearing Members meet Variation Margin calls and Intraday Margin calls within agreed timescales to cover current exposures.
- DCCC narrowly defines eligible collateral (see Principle 5).
- Use of a default waterfall approach (see Principle 13), which includes the ability of DCCC under its Clearing Rules to make powers of replenishment on Clearing Members in the event that prefunded resources are not sufficient to cover losses.

DCCC has provision for a Default Fund, which is calibrated to be sufficient to meet the two largest losses in excess of Initial Margin held by Clearing Members under severe but plausible market conditions. DCCC itself makes a pre-defined contribution to the Default Fund of \$2.75m<sup>2</sup>.

DCCC Default Fund sizing is either set with reference to a Default Fund stress test, where the two largest losses with respect to Clearing Members' positions (i.e. Cover 2) and margin requirements are extracted, and either historical stress scenarios or hypothetical are used for the stress calculation.

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<sup>2</sup> As at 1 May 2019.

Back testing is also performed to monitor the adequacy of the margin parameters and margin model relative to expected coverage. To this end, a daily review is carried out to determine whether the losses sustained in each account over the appropriate close-out period have been covered by the Initial Margin posted at the beginning of such period.

The Recovery & Resolution policy anticipates the tools and options available to DCCC in circumstances beyond the extreme but plausible market conditions used in stress testing. DCCC complies with SCA requirements, including in respect of its own contributions to the Default Funds and its regulatory capital.

**Review Arrangements:** All policies, including Margin Methodology are reviewed and approved by the DRC at least annually. Changes to the Margin Methodology are considered by the Clearing Operations & Risk Department, and are submitted to the DRC. Default Fund re-calculations are undertaken monthly, with the results submitted to the DRC. The results of stress testing are presented to the DRC monthly. If any of the daily testing of the risk models demonstrates exceptions outside of the required tolerance, the Clearing Operations & Risk Department reviews the models and recommends revisions to the DRC.

**Model Validation:** DCCC reviews the operation of the model at least annually and has procedures in place that provides explicit guidance on model risk management activities, allocates responsibilities for these activities and outlines the governance mechanism to ensure these activities are carried out as required.

**Stress Testing:** Stress testing results are reviewed on a daily basis to identify any deficiency or breach, with escalation to DCCC management and calling of stress loss charge to maintain Default Fund coverage at all times. At least annually, DCCC's Clearing & Operations Risk Department conducts a review of the standard stress testing scenario set and suggests for any scenario additions or retirement.

See Principle 6 for more information on stress testing.

**Default/Credit Loss Rules and Procedures:** The DCCC Default Rules deal with the application of assets upon an event of default, the powers of replenishment reserved to DCCC in the event of there being relevant shortfalls and the use of the Default Fund in this context. Relevant liquidity policies provide detail in relation to the management of liquidity requirements.

The Rules allow DCCC to implement mandatory compulsory settlement of open positions where DCCC has been unable to offset losses incurred as a result of the default of a Clearing Member against the assets contained within the "default waterfall".

**Risks arising from payment process:** DCCC approves Clearing Banks, based on a number of criteria that include, but is not limited to: operational capability, financial capital requirements; and regulatory standing. With regard to this latter point, all Clearing Banks must have the appropriate regulatory license from the Central Bank of the UAE. All Clearing Banks are subject to regular monitoring of credit ratings, with the results submitted to DRC. The Finance Department proactively manages the balances held with each Clearing Bank on a daily basis that arise from the payment and receipt of cash

received as margin collateral as well as its own funds to ensure that uninvested cash balances are kept to a minimum, both intra-day and end-of-day.

**Investment risk:** The Finance Department invests funds received from Clearing Members in accordance with the Treasury Policy. This policy is subject to regular review by both the DRC and the DCCC Board.

## Principle 5: Collateral

***An FMI that requires collateral to manage its or its participant's 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

DCCC requires collateral with low credit, liquidity and market risks to manage its Clearing Members' credit exposure. DCCC sets and enforces conservative haircuts and concentration limits.

**Asset Eligibility:** The Margin Methodology Policy sets out the arrangements by which DCCC considers the eligibility of specific assets as acceptable collateral for margin purposes and references the appropriate valuation and haircut procedures. DCCC has full decision-making powers on which assets are accepted as collateral. Eligibility for being included is based on general principles being those instruments with low credit, liquidity and market risks. DCCC has established a ratio of cash/non-cash collateral that it will accept from Clearing Members. The Margin Methodology Policy is reviewed at least on an annual basis or more frequently if there is a major change.

**Collateral Management:** In line with the Margin Methodology Policy, the Clearing Operations & Risk Department monitors the collateral on a daily basis, to ensure that the cash/non-cash ratio is met by all Clearing Members.

**Wrong-way Risk:** DCCC has documented its policies for the identification and mitigation of specific and general wrong-way risk within its acceptance of collateral. In general, wrong-way risk stress testing is designed to encourage that collateral provided is not correlated with the net futures/options position.

**Valuation Practice:** In order to mitigate the risk of large intraday moves leading to significant losses of collateral value, DCCC monitors the value of assets on deposit on a near real time basis. If DCCC deems that there has been a material deterioration or is likely to be a material deterioration based upon reasonable expectations in relation to the creditworthiness of the issuer of a security posted as collateral, or other potential issue, then DCCC may take steps to mitigate that risk. DCCC employs a very conservative approach to the valuation of acceptable collateral. In the event that market failure results in an inability to price collateral, Clearing Members will be required to replace the collateral with cash or other price transparent and acceptable collateral. In addition, DCCC has the ability to significantly increase haircuts in the short term to provide additional security with respect to collateral price valuation.

**Haircut Model:** The haircut model is set out in the Margin Methodology Policy. Collateral haircuts are set by Clearing Operations & Risk Department and are applied in such a way that adequately reflects the potential for declines in asset values and considers market risk, credit risk, wrong-way risk and FX risk in addition to concentration and liquidity risk.

**Legal Issues Concerning Collateral:** DCCC takes all margin and Default Fund assets by way of title transfer and thus has full unencumbered ownership for the assets it holds irrespective of their origin.

**FX Issues:** DCCC accepts collateral quoted in another currency to the liabilities it covers and applies cross-margining haircuts to mitigate FX risk.

**EOS Clearing System:** DCCC uses this system to provide Clearing Members with, amongst other things, information about the assets deposited. The primary features of this system are:

- Real time updating of positions;
- Near real-time, and overnight mark-to-market valuation;
- Separate review and approval of collateral change requests initiated by participants; and
- Automatic confirmation checks that requests for changes in collateral will not result in exposures not having sufficient collateral to manage the financial risks that arise from the exposure.

## Principle 6: Margin

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

### Summary narrative

**Margin System:** DCCC's stated risk appetite is to ensure that Initial Margin ("IM") is set at an appropriate level to cover the foreseeable potential losses on a Clearing Member default. IM deals with DCCC's potential future exposures. DCCC also calculates Variation Margin ("VM") that corresponds to current exposure, which is the portfolio or segregated accounts positions' profit and loss - that is mark-to-market movement or settlement movement (as relevant). Part E of the Rules establishes the right of DCCC to call and collect margin from its Clearing Members and to set the eligibility and form of collateral that may be lodged by Clearing Members with DCCC. In addition to IM, DCCC, where relevant, applies certain add-ons. DCCC operates an intraday risk system that allows it to recalculate IM and VM at regular time intervals throughout the business day and to make intraday margin calls where necessary.

**Margin Methodology Policy & Procedures:** The policies and procedures in relation to Margin Methodology are documented and approved by the DRC. While DCCC Policies are not publicly disclosed, DCCC does provide information on its website which allow participants to replicate margin calculation for their portfolios (or segregated accounts).

**Credit Exposure Determinants:** The determinants of credit exposures for all contracts are the volatility of the underlying, market price, the correlation of the market price with other economically linked risk factors, the change in volatility for non-linear contracts and the change in correlation of volatility with other economically linked risk factors. DCCC adds on to margin calculations amounts reflecting concentration of positions and potential for wrong way risk.

**Margin Requirements:** DCCC determines margin requirements commensurate with the risks, and particular attributes of its businesses as follows:

The margin requirements are driven by:

- VM, settlement movements where profit and loss are credited/debited; and
- IM on portfolio positions (for each segregated account).

While VM is a PnL calculation based on intraday and EOD price, the IM is calculated via SPAN® underpinned by margin rate parameters. These parameters are set as per DCCC Policies and reflect each product's specific risk such as its volatility and cyclicity and its underlying volatility.

**Price Data:** DCCC uses DGCX's daily settlement prices as the main data source for its margin model. These prices are set according to DGCX's Contract Specifications. DCCC uses returns (either log return or absolute) derived from the exchange prices in order to determine the margin rate parameters of a contract.

**Model assumptions are defined and documented:** DCCC determines potential future exposure using the SPAN® algorithm which is documented on DCCC's website.

Margin requirements are re-calculated separately for each account, which can be proprietary, omnibus gross or individual gross client accounts.

The SPAN® model uses margin rate parameters as inputs. These inputs are set to meet a minimum confidence level of 99% over a one-day holding period in accordance with the revised SCA regulations. SPAN® determines the IM by identifying strategies (such as butterfly), calendar spreads and futures positions and applies the associated margin rates for all components to compute the Initial Margin. The algorithm then identifies pairs of contracts with different underlyings (within the same market or asset class) and applies a credit rate to opposite futures contracts in order to provide some level of diversification benefit.

The margin rate parameters are calculated using historical prices and returns over a period covering the last two years, and DCCC has adopted the Exponentially Weighted Moving Average ("EWMA") model to determine margin rate parameters. The EWMA model gives a 94% weighting to past data, and 6% to current/recent returns.

The look back period is 10 years, and the margin rate parameter applied is the most conservative value of the permutations.

However, where DCCC's assessment of market liquidity and Clearing Members' portfolio positions is such that DCCC considers that additional margin is required to cover for any liquidation shortfall, then this shall be called from the relevant Clearing Member(s) (called concentration charge).

The standard liquidation period is one (1) day as per revised SCA regulations and DCCC follows this standard period as the default liquidation period.

To identify specific Wrong Way Risk, DCCC considers all the positions that a Clearing Member holds in derivatives for which non-cash collateral has been submitted that has been issued by the Clearing Member.

**Mark-to-Market:** DCCC, as a minimum, marks or settles to market cleared positions or trades on a daily basis. Marking or settling to market results in either the collection or payment of PnL based on DGCX settlement prices or based on mark-to-market values. Although settling or marking to market encompass different processes, both achieve the same outcome which is to ensure losses are properly accounted for and trades and positions are held at current market value. VM is made up of realised VM and unrealised VM. Realised VM consists of the mark-to-market value of positions which are closed out while unrealised VM consists of market-to-market value of opened positions.

VM reflects the daily change in market value of a position. VMs are also calculated on a near real-time basis intraday comparing intraday most recent prices versus the EOD settlement price. VMs are collected daily EOD together with IMs and any other requirements. As DCCC operates a gross margin up-front margin methodology so if VM losses exceed 75% of total available collateral then the Clearing Member is advised automatically by the EOS Clearing System. At the same time the system will automatically

prevent the Clearing Member from increasing the size of any open positions by placing the Clearing Member into “square-off” mode, that will only permit orders that, if matched, have the effect of reducing the positions to be accepted by DGCX.

**Cross margining and offsets:** DCCC allows offsets between two contracts where appropriate. The margin rate parameter itself is set as a percentage credit against the scanning range from the individual legs of the inter-commodity spread position. When deciding whether to provide risk offsets, the Clearing Operations & Risk Department takes into account the level of correlation and the reliability of the correlation. Additionally there must be an economic rationale for provision of a risk offset. There is no cross- margining between DCCC and any other CCP.

**Assessment of Portfolio Margining Methodologies:** DCCC runs daily macro back-testing (outright contract level back-testing) to ensure sufficient collateral was collected to cover daily mark-to-market value. Insufficient collateral will lead to IM breaches and trigger a review of the individual margin rate parameters constituting the portfolio, including inter-commodity margin rate parameter offsets. DCCC also runs daily back testing on its inter-commodity rate offsets to ensure correlation has not broken between two legs since the last margin update as well as daily back-testing of all individual margin rate parameters components.

**Model Back-testing:** The Clearing Operations & Risk Department calculates the IM requirement to a minimum 99% confidence level over a one-day time horizon at the individual product parameter level. The results of the daily back-testing are shared with management, and with the DRC on a monthly basis. Model Review is undertaken on an annual basis, with the results presented to the DRC.

## 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

DCCC has robust arrangements for the management of liquidity risk during business-as-usual and stressed situations. An operational liquidity risk appetite and management limits are set and closely monitored by DCCC and daily stress testing is performed to determine the adequacy of its liquid resources. DCCC does not rely on supplemental liquid resources, or any assumption of the provision of Central Bank credit, in meeting its stressed liquidity needs.

**Liquidity Risk Management:** DCCC's approach to managing its liquidity risk is documented in its Treasury Policy. The Treasury Policy is subject to regular review and is designed so that there is a high level of confidence in DCCC's ability to effect payment and settlement obligations in all relevant original currencies as they fall due, including where appropriate intraday. It also includes the assessment of DCCC's potential future liquidity needs under a wide range of potential stressed scenarios, which are also covered under the Recovery & Resolution Policy.

DCCC has five (5) Clearing Banks<sup>3</sup> as an interbank payment system, to transfer funds to and from Clearing Members. There is no Central Bank available to DCCC for USD and no overnight Central Bank facilities are offered to DCCC.

**Liquidity Management Tools:** DCCC has in place liquidity management tools to manage cash flows from and to Clearing Members which provides real time insight into cash balances and status of pending transfers. The Finance Department provides at least daily forecasts of available liquidity by currency, using daily collateral movements. The Finance Department is able to use web-based proprietary access tools to perform enquiry activities on its bank accounts.

**Stress Scenarios:** The Finance Department conducts periodic LSTs based on both business-as-usual and liquidity stressed losses in extreme historical scenarios. Liquidity scenarios and stress tests are DCCC specific and take account of the DCCC payment and settlement structure and the liquidity risk that is borne directly by DCCC, by DCCC Clearing Members, or both. The various conditions, such as a sudden and significant increase in position and price volatility, position concentration, change in market liquidity, and model risk, including shift of parameters, form part of the default stress model which is the input for the LST.

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<sup>3</sup> As at 31 March 2019.

In its LST Scenarios, DCCC sizes its payment obligations to the non-defaulting Clearing Members based on the defaulting party's payment obligations. The LST assumes a 1:1 relationship but in principle the Clearing Member is not obliged to take the amount out and so it can only be less than 100%. DCCC estimates the size of the liquidity requirement on an aggregated and per-currency basis. The Liquidity Risk process and scenario definition is designed to provide early indications of potential liquidity shortfalls. A process is described to determine actions necessary to address the potential issue, and actions such as contacting and instructing investment providers to liquidate overnight purchases or close out or move trades to alternate counterparties could be undertaken.

**Liquid Resources:** It is DCCC's intention through its Treasury Policy to hold liquid resources sufficient to meet its settlement obligations and to have in place committed lines of credit with commercial banks in the UAE, such that in total the fund available would be equivalent to the stressed losses attributable to its two largest Clearing Members and their affiliates.

DCCC maintains financial resources sufficient to cover a wide range of scenarios, that would cover the default of the two Clearing Members and their affiliates that would generate the largest aggregate payment obligation to DCCC in extreme but plausible market conditions.

**Qualifying Liquid Resources:** The immediate liquidity available to DCCC is inherent within the margin collection and investment arrangements. All minimum liquid resource requirements of DCCC are met by qualifying liquid resources. For the purpose of liquidity stress testing, only the immediate liquid resources available to DCCC are used.

**Access to Central Bank Accounts, Payment Services, or Securities Services:** DCCC does not have access to routine overnight credit at a Central Bank.

**Reporting & Escalation:** The Treasury Policy stipulates the reporting and escalation procedures to be followed. Breaching the risk appetite level does not result in an immediate illiquid position but increases the risk of DCCC becoming illiquid if a certain extreme situation occurs and no action is taken. The process for raising awareness, obtaining guidance and instigating actions are described in both the Treasury Policy and the Recovery & Resolution Policy.

## Principle 8: Settlement finality

***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.***

### Summary narrative

The Rules, which is publicly available, define the point at which settlement is final, the process for settlement and the point of irrevocability.

DCCC provides real-time settlement, thereby ensuring that final settlement occurs no later than the end of the intended value date. Confirmation of settlement is generated by the delivery system and communicated via an automated messaging system (e.g. SWIFT) to the relevant Clearing Member. DCCC presumes that all trade dates and contractual settlement dates are equal to the date of entry of an instruction in the EOS Clearing System or such other system that DCCC may use for the physical delivery of open positions. Any deviation from this assumption must be notified to DCCC as it will result in a mismatch and non-settlement. Delivery settlements must take place during normal opening hours of the relevant settlement or depository system. DCCC does not give settlement instructions in extended settlement periods such as “daylight” or “Real Time Settlement” periods.

All settlements are to be executed by DCCC with a request for same day settlement. Clearing Members may cancel or amend settlement instructions prior to the time when DCCC sends settlement instructions to its bank or custodian.

## Principle 9: Money settlements

***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 risk arising from the use of commercial bank money.***

### **Summary narrative**

Initial and Variation Margins are calculated in USD only, as this is the only currency of the underlying clearing contracts.

DCCC has set criteria for Clearing Banks, that include, but is not limited to: operational capability, financial capital requirements; and regulatory standing. With regard to this latter point, all Clearing Banks must have the appropriate regulatory license from the Central Bank of the UAE. All Clearing Banks are subject to regular monitoring of credit ratings, with the results submitted to DRC. The Finance Department proactively manages the balances held with each Clearing Bank on a daily basis.

To guard against an intraday failure of a commercial bank, which might affect the payment flows between DCCC and Clearing Members, the Rules detail that a Clearing Member will continue to be liable for any amount due under the Clearing Rules until it is transferred to the DCCC. No payment obligation of a Clearing Member shall be treated as having been satisfied or discharged unless and until relevant funds are received by DCCC in relevant DCCC accounts at such a bank not subject to an insolvency.

## Principle 10: Physical deliveries

***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.***

### Summary narrative

DCCC's obligations (and those of its Clearing Members) in relation to physical deliveries are stated in Part G of the publicly available Rules as well as in the relevant DGCX By-Laws. In broad terms, the Rules are defined in order to protect the buyer and the seller (in value terms where necessary) and to protect DCCC. They define a successful delivery but also afford DCCC flexibility in the event that either the seller or the buyer fails. The Rules allow DCCC to cash settle a contract.

DCCC and Clearing Members are contractually bound to comply with the DCCC Rules pursuant to a Letter of Undertaking that is executed by DCCC and each Clearing Member prior to such Clearing Member commencing clearing activities with DCCC.

DCCC systems, processes and procedures are designed to actively position manage the delivery of physical instruments and commodities.

The DCCC Clearing Operations & Risk Department is responsible for and use the operational risk framework to manage the settlement and delivery process from exercise / expiry to completion. Operations Analysts, plus the associated Management team, are responsible for the following:

- Monitoring Deliveries;
- Partial Delivery processing; and
- Running the tender allocation process.

DMCC facilitates the physical settlement of each delivery, under instruction from the DCCC Clearing Operations & Risk Department.

DCCC will always debit the buyer before the delivery takes place, and will only credit the seller once the delivery has taken place and DCCC was able to confirm it.

## Principle 11: Central Securities Depositories

***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.***

This PFMI is not applicable to DCCC.

## Principle 12: Exchange-of-value settlement systems

***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.***

### Summary narrative

The Rules and Clearing Member Letter of Undertaking provide the legal and contractual basis for final settlement of contracts. These, together with risk management arrangements in place, address principal risk to DCCC. Final settlement of one obligation occurs if, and only, if the final settlement of the linked obligation also occurs.

Where a futures or options expiry results in a physical delivery, DCCC will always debit the buyer for the value of the goods to be delivered before the delivery takes place. Conversely, the sellers will only be credited once DCCC has established unequivocally that the delivery has taken place (see Principle 10). This method will apply in any situation where Delivery Versus Payment (“DVP”) is not available.

Where DVP is available, DCCC will always use this facility when settling deliveries. All linked obligations are settled on a gross basis.

## Principle 13: Participant-default rules and procedures

***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.***

### Summary narrative

Default Rules and Procedures: Part H of the Rules details the events which constitute an "Event of Default", and addresses key aspects of a participant default, including, inter alia:

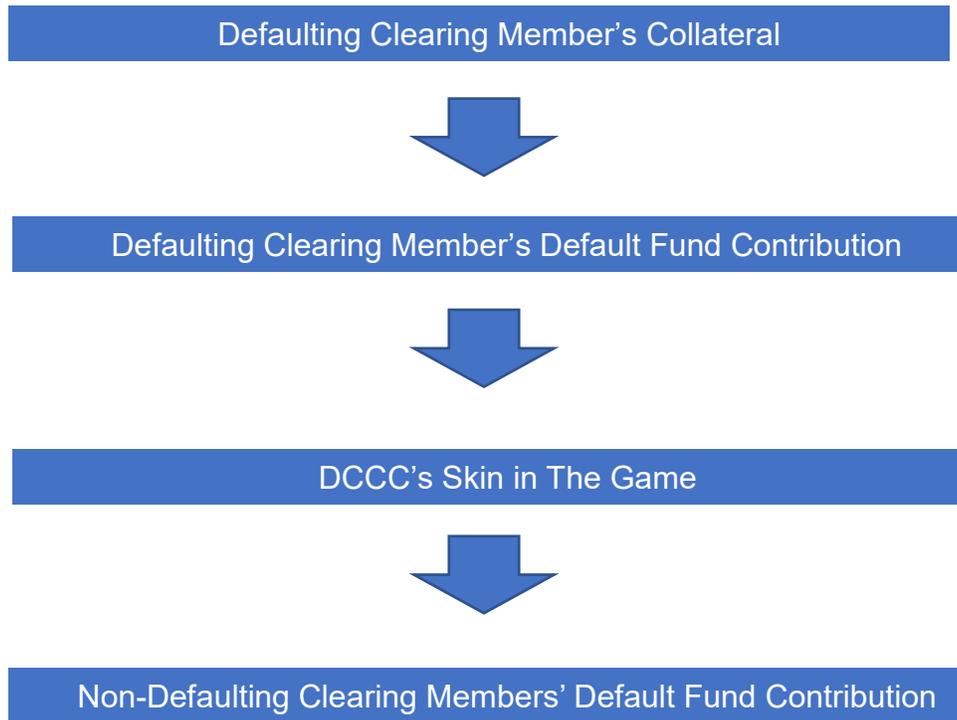
- actions to be taken following the declaration of a Clearing Member Event of Default;
- termination and close out of Contracts on a Clearing Member Event of Default;
- the default procedure for termination events;
- termination of membership; and
- use of Default Fund contributions.

The Rules also set out how and the order in which DCCC is able to make use of available financial resources that it maintains for covering financial losses and containing liquidity pressures arising from default (e.g. Default Fund contributions and DCCC contributions).

In addition, prompt use of financial resources is maintained as follows:

- DCCC has documented its approach to handling a Clearing Member default in its Default Management Procedures;
- DCCC's default waterfall arrangements (illustrated below) set out the priority of use of available financial resources in the event of a Clearing Member default;
- DCCC's Treasury Policy describes DCCC's immediately available liquidity inherent in its margin collection and investment arrangements (see Principle 7 (Liquidity Risk));
- DCCC's Recovery and Resolution Policy describes the use of certain recovery tools and options, including (where appropriate) powers of replenishment; and
- DCCC has access to various sources of liquidity funding.

Part H of the Rules outlines the following order in which financial resources can be used:



DCCC's Default Management Procedures (“DMP”) sets out specific responsibilities with regard to the default provisions set out in the Rules. It outlines the actions that management will carry out in the event of a default. The DMP recognises that the cause of insolvency and post-insolvency actions may vary depending on the prevailing circumstances which lead to the default rules being implemented and as such is not designed to be prescriptive.

The DMP sets out clear roles and responsibilities when addressing a default. Prior to the declaration of a default, DCCC will work with the Senior Management of the Clearing Member experiencing difficulties, and regulators and other clearing houses as may be prudent, to seek solutions to the issue and avoid action under Default Rules. In the event that it is necessary to declare an Event of Default, the DRC has authority to make this declaration. DCCC is responsible for notifying Clearing Members and exchanges and for publishing relevant notices on its website.

The DRC will convene daily throughout the default resolution process and will be responsible for ensuring that all required notifications and, where relevant, information is shared to assist in the orderly management of a default.

Public Disclosure of Default Rules: DCCC's Default Rules are included in Part H of the Rules which are publicly available on its website. These cover: circumstances in which action may be taken; who may take these actions; scope of actions which may be taken; the mechanisms to address DCCC's obligations to non-defaulting participants; and,

where direct relationships exist with participants' customers, the mechanisms to address the defaulting participant's obligations to its customers.

**Testing and Review:** The DMP is reviewed annually by the DRC. Additionally, fire-drills are undertaken at regular intervals during the year. Following each fire-drill, DCCC will review whether the DMP is adequate and, where necessary, amend the procedures.

## Principle 14: Segregation and portability

***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.***

### Summary narrative

Segregation and Portability Arrangements: The client segregation and portability rules in the Rules are designed to provide the framework whereby DCCC and its Clearing Members can provide clients with the choice between "omnibus client segregation" (known as "Pooled Segregated Accounts") or "individual client segregation".

Depending on the relevant insolvency and segregation regime, and on the election made by the customer, these accounts may facilitate the portability of assets and positions of clients to a non-defaulting Clearing Member. The account structure segregates customers' positions from those of the Clearing Members themselves. This is achieved through use of separately identifiable accounts for house (proprietary business) and customers (client business). The protection between customers in the event of customer default varies according to the customer segregation model into which the customer elects to enter with the Clearing Member and which of the position accounts is used by the Clearing Member to hold the customer's business.

If the Clearing Member in default has customer-related positions, DCCC will, depending on the prevailing situation and pursuant to Part H of the Rules, seek, but not guarantee, to facilitate the transfer of customers' positions to another solvent Clearing Member, subject to agreement by the receiving Clearing Member.

DCCC has no obligation to enter into or effect any transfer if to do so would result in DCCC being under-collateralised with respect to any remaining contracts or would raise other risk management concerns. If DCCC is unable to transfer all positions on the defaulter's customer accounts to another non-defaulting Clearing Member, they will be liquidated.

Portability will depend on the type of position account in which the customer's positions are held. Other than for individually segregated accounts, DCCC relies on Clearing Members to provide accurate records relating to individual customers. For individually segregated accounts, DCCC maintains its own records of relevant customers' positions and margin requirements.

**Portability Arrangements:** DCCC requires a properly executed Default porting notice to be submitted in order to facilitate porting of client positions. This needs to be completed by both the customer and the non-defaulting Clearing Member to whom the positions will be ported.

**Disclosure of Rules:** The Rules are publicly available on the DCCC website.

## Principle 15: General business risk

***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.***

### Summary narrative

**Identification, Monitoring and Management of Business Risks:** As part of wider risk management processes, DCCC has established a number of mechanisms to monitor and manage its business risks including: monitoring financial performance against budgets, forecasts and capital resources; analysis of emerging regulatory changes and tracking these to implementation; involvement of the Compliance & Membership team as appropriate in major projects and initiatives; and monitoring contract volumes and discussions with relevant exchanges and Clearing Members on competitiveness.

In order to identify specific business risks DCCC maintains a system of internal controls sufficient to provide reasonable assurance that transactions are executed in accordance with management's authorisation; transactions are recorded as necessary; access to assets is permitted only in accordance with management's authorisation; and recorded accountability for assets is compared with the existing assets at reasonable intervals.

**Liquid Net Assets:** DCCC holds liquid net assets funded by equity (issued and fully paid ordinary share capital). DCCC's capital requirements are defined by SCA, and whilst these requirements do not include a specific provision for business risk and wind down/restructuring costs DCCC seeks to hold net liquid assets equal to six months of operating expenses. The resulting liquid net assets held would enable DCCC to continue its operations as a going concern, in the event it incurs a general business risk loss, or would enable DCCC to complete the steps necessary to achieve a recovery or orderly wind down of the CCP, as appropriate, if such action is taken.

**Wind Down Plan:** DCCC has established a Recovery & Resolution Policy that provides details of the plan that DCCC management may have to adopt to wind down over a six-month period. In determining wind down, there are two options: transfer clearing service to another clearing house (transfer option) or terminate the clearing service (termination option). It would be for the DCCC Board to determine which of these two options should be adopted.

**Quality of Assets Held:** DCCC holds assets that are high quality and sufficiently liquid in order to allow it to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions. The Treasury Policy, which forms part of the risk management framework, is designed to minimise DCCC's exposure to potential credit losses arising from an investment counterparty defaulting. The Finance Department monitors compliance with capital adequacy on an on-going basis. The DCCC Board further oversee business performance on a routine basis.

**Raising Additional Equity:** DCCC monitors its capital resources regularly against capital resource requirements. Should there be a need for more capital DCCC will seek an

injection of additional capital resources from DMCC, which ultimately holds 100% of the share capital in DCCC.

## Principle 16: Custody and investment risks

***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.***

### Summary narrative

**Location of Assets Held:** DCCC safeguards its own and its Clearing Members' assets through the use of approved Clearing Banks which were chosen based on their ability to provide the service required by DCCC - i.e. creditworthiness, relevant experience and operational stability.

**Access to Assets:** Financial instruments posted as margin, default fund contributions and other financial resources are received by DCCC with full title. DCCC has the right to access the financial instruments through issuing instructions for the movement of assets held by the Clearing Banks on demand in accordance with relevant market settlement deadlines.

**Investment Strategy:** DCCC has a documented Treasury Policy which is reviewed by the DRC and approved by the DCCC Board. Investments on behalf of DCCC will be made in accordance with the "prudent person" rule, i.e. with judgement and care, under circumstances then prevailing, which persons of prudence, discretion and intelligence would exercise not for speculation, but for investment, considering the probable safety of the principal as well as the potential income to be derived.

Funds collected to cover margin requirements and the Default Fund contributions, are invested in accordance with the Treasury Policy, which is closely aligned with its risk management practices, including daily monitoring of credit quality of all counterparties and monitoring of credit risk within the investment portfolio.

General principles for accepting assets as suitable for investment purposes must meet the following criteria: being able to be revalued on a daily basis and quoted intraday by third party financial market news information providers; being highly liquid with either an active sale and repurchase agreement, with a diverse group of buyers and sellers or are secured instruments that are freely convertible into cash; and not being issued by a Clearing Member, or any entity that is part of the same group as the Clearing Member, or another clearing house.

The DCCC Board regularly reviews the Treasury Policy to determine whether the stated investment objectives are still relevant and achievable.

## Principle 17: Operational risk

***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.***

### Summary narrative

DCCC's ERM framework includes, but is not limited to operational risk. Operational risk is defined by DCCC as the risk that deficiencies in information systems or internal processes, human errors, management failures or disruptions from external events will result in the reduction, deterioration or breakdown of services provided by DCCC. DCCC identifies plausible sources of operational risk, both internal and external, and mitigates their impact through the use of appropriate systems, policies, procedures and controls. DCCC's systems are designed to ensure a high degree of security and operational reliability and have adequate and scalable capacity. DCCC's business continuity management aims for the timely recovery of operations and the fulfilment of DCCC's obligations, including in the event of a wide-scale or major disruption. DCCC identifies, monitors and manages the risk that key participants, other FMIs and service and utility providers pose to DCCC's operations and also the risks that DCCC poses to other FMIs.

Management of Operational Risk: Operational risks are formally assessed by the Clearing Operations & Risk Department based on impact and likelihood of the risk crystallising to obtain a risk score/rating (i.e. Very Low to Very High). This rating is compared against DCCC's risk appetite (see Principle 3 for more information) in order to determine an appropriate course of action. Operational risks are recorded in the Risk Register on an on-going basis. Operational risk appetite metrics and associated risk limits are subject to on-going monitoring to ensure conformance. Any breaches or negative trends are escalated accordingly by the Clearing Operations & Risk Department.

To address operational risks relating to DCCC's staff, there are documented HR policies that address hiring, training, retention and development of staff which are used with regard to DCCC. Resourcing requirements to support DCCC's business strategy and operational requirements are discussed and agreed with Senior Management on an on-going basis. Potential employees are subjected to rigorous assessments (e.g. interviews and competency-based questionnaires, where appropriate) and pre-screening to ensure qualified and talented staff are hired for DCCC positions.

Risk Owners are responsible for complying with the ERM framework and for updating and maintaining their entries in the Risk Register. Clearing Operations & risk management are responsible for the adequacy and performance of their controls, and the implementation and assessment of risk limits. DCCC Heads of Department are responsible for ensuring that their staff members have an awareness of operational risk and the policies and procedures to implement its requirements. They also ensure adequate training for their staff members in specific responsibilities.

Operational Reliability Objectives: DCCC aims to provide a safe and efficient clearing service. The operational reliability objectives of DCCC's systems and processes are set out in the ERM framework, which also covers the core services provided by DCCC, including:

- Interruption of services provided to Clearing Members through key systems – the appetite for interruption is zero. Any breaches of this are reported and managed as incidents with varying degrees of severity;
- Deadlines for the delivery of key outputs that must be made available by a certain time during the EOD run. Any failures to meet these deadlines are reported to management and managed as incidents with varying degrees of severity;
- Financial losses due to data and processing errors and inadequate investment of collateral, etc.; and
- Disaster recovery and business continuity objectives, with time targets by which the standby site must be fully functional.

DGCX's incident management processes apply to any DCCC event which disrupts or could disrupt a service. DGCX has procedures in place to manage incidents and breaches and to allocate priorities. Incidents are investigated so that the root cause is understood and any issues appropriately remediated.

Achievement of Service-Level Objectives: DGCX's IT Operations team oversees capacity management, database administration, server management and IT asset management (including software licensing). They are responsible for monitoring applications and servers used by DCCC with respect to system performance and capacity to ensure that volume and operational requirements are met. All production, customer-facing, and DCCC back office servers are actively monitored as part of DGCX's IT Operational Procedures.

Different tools are used to capture and report performance across all DCCC systems, and includes the capturing and reporting of daily process times as well as hardware performance metrics. The performance data are used to produce monthly performance reports across all systems. Situations where operational volumes may be nearing or exceeding agreed capacity are immediately escalated to management with action taken in accordance with the Capacity Management policy.

Physical and Information Security Policies: DGCX's IT risk management and information security programmes which include: IT security risk assessments; the Cybersecurity Strategy; Information Security Policy and Procedures; threat and vulnerability testing regimes; and physical and environmental controls policy and procedures, is applied equally to DCCC. DCCC operates within the DGCX's Corporate Information Security Policy covering physical and information security.

The Information Security Department is responsible for technical implementation of security mechanisms, interfacing with clients and documenting policies and procedures. DCCC has documented its compliance with ISO27001:2013 standard.

Business Continuity Plan: DCCC's Business Continuity Plan ("BCP") is part of DGCX's plan and is designed to ensure:

- timely recovery of operations and fulfilment of clearing obligations, including in the event of a wholesale or major disruption; and
- effective coordination among affected parties during a BCP/DR event.

The BCP has established BCP and DR programmes which are supported by Business Impact Analysis, with oversight provided by EXCOM.

The BCP has been designed to support incident management, continuity and recovery in a crisis event, which typically include operational events such as loss of site/facilities or technology outages. DGCX's IT teams conducts several fail-over testing during the year and DCCC Clearing Operations & Risk Department staff participate in order to ensure its business can effectively respond to large scale disruptions, and maintain continuity of its operations.

**Risks arising from Key Participants, Other FMIs, and Service and Utility Providers:**

DCCC has operational dependency on DGCX to provide clearing and other systems as well as utilities and facilities. Risks to DCCC's operations posed by Clearing Members, other FMIs and service/utility providers include:

- failure of SWIFT to recover sufficiently quickly to ensure that settlements and cash movements can be passed without market disruption;
- failure of other FMIs to restore its systems to ensure accurate recording of transactions and positions; and
- ability of appointed third party service providers to manage DCCC's treasury activities in accordance with the Treasury Policy and to support the management of DCCC's liquidity risk.

All outsourced services are required to be governed by formal outsourcing or contractual arrangements. DCCC undertakes necessary measures to ensure that service providers meet adequate reliability and contingency requirements, including review of service providers' BCP.

## Principle 18: Access and participation requirements

***An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access***

### Summary narrative

**Fair and Open Access:** DCCC provides fair and open access to its services based on risk-related participation requirements. DCCC's membership criteria are publicly available via its website. The Clearing Member application process ensures that applicants evidence compliance.

**Participation Requirements:** To become a Clearing Member, an applicant must meet and continue to meet membership criteria listed in Part B of the Rules. The criteria are monitored on an on-going basis and include, inter alia:

- holding sufficient capital;
- being party to a Clearing Member Letter of Undertaking;
- holding all necessary regulatory authorisations, licenses, permissions and approvals in its country of origin, and any other jurisdiction in which it conducts business;
- it and its directors and officers being fit and proper;
- having appropriate technical and operational systems and controls;
- having appropriate business continuity procedures;
- being able to meet margin requirements;
- having contributed to the Default Fund, as appropriate; and
- not being subject to insolvency or other event of default.

**Compliance with Participation Requirement:** DCCC uses various tools to monitor compliance with access criteria, including review of financial statements, regulatory reporting and information from SCA.

DCCC has objective and transparent procedures for the suspension and orderly exit of Clearing Members that no longer meet the criteria referred to above. DCCC may only deny access to Clearing Members meeting the objective criteria referred to above where duly justified in writing.

## Principle 19: Tiered participation arrangements

***An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.***

### Summary narrative

**Gathering Basic Information about Indirect Participation:** DCCC generally operates a principal-to-principal model of clearing participation which means that there is no direct exposure to the default of a Clearing Member's client (unless that default precipitates the default of the Clearing Member itself). However, many Clearing Members provide intermediary services to clients, such indirect participation is available in all of DCCC's clearing services.

All applicants to become a Clearing Member are subject to membership due diligence both prior to becoming Clearing Members and on an on-going basis. In all cases, the Clearing Membership application sets out whether or not a Clearing Member is permitted to clear for its indirect participants through offering a client account. Some of DCCC's Clearing Members are only permitted to operate a house account.

DCCC requires Clearing Members who offer client clearing to hold segregated house and client accounts for positions and margins and offers a choice of client segregated account structures. This model supports clearing of direct clients (i.e. clients of Clearing Members) as well as indirect clients (i.e. clients of clients of Clearing Members), which together are referred to as "indirect participants". DCCC has no duty of care or liability to indirect participants. DCCC offers the following client segregated accounts customer between "omnibus client segregation" (known as "Pooled Segregated Accounts") or "individual client segregation".

Where a Clearing Member provides services to clients, DCCC reviews the applicant's client risk management approach as part of its due diligence. Clearing Members are required to ensure that documentation put in place with indirect clients is in line with the Rules and that DCCC' standard Broker/Client Agreement is used for each Client for whom a Clearing Member provides clearing services for. DCCC evaluates risk based on the premise that it is directly exposed to the position or market risk resulting from the transactions made by indirect participants but faces the Clearing Member credit risk (regardless of whether risk originates from the Clearing Member or client).

The material risks arising at DCCC from tiered participation are the default of a client which disrupts or materially adversely affects a Clearing Member. DCCC mitigates such risks by assuming it is directly exposed to all positions and achieving the risk collateralisation to the same confidence level as the Clearing Member origin risk. DCCC has the authority, where a portfolio is overly concentrated, to apply margin multipliers to mitigate such risk at an account level.

Material Dependencies between Direct and Indirect Participants: DCCC identifies material dependencies through real-time monitoring of Clearing Members and the activity in each of its client accounts, be they in omnibus or segregated accounts. DCCC is able to show the proportion of house to client activity for its Clearing Members, and where

clients are known, DCCC is also able to calculate the exposure to named clients in total, by clearing service and by Clearing Members.

**Large Value/Volume Transactions:** DCCC identifies indirect participants that are responsible for significant proportions of transactions by monitoring the activity of its Clearing Members and the activity in each of its accounts. DCCC's risk in the event of default by a Clearing Member is the net position of the Clearing Member (including client positions). Accordingly, DCCC's primary focus is on monitoring positions rather than volumes or values of transactions or individual clients.

Both DCCC and DGCX monitor trading activity and positions of indirect participants through monitoring positions ahead of physical delivery. Where appropriate, DCCC will require additional margin to be posted in the form of concentration charges, stress loss charges or capital-to-margin ratios.

**Risks Arising from Tiered Participation Arrangements:** DCCC reviews the risks arising from tiered participation arrangements through the production of daily client positions and associated cash flow reports. Margin multipliers are applied where a participant's client portfolio is overly concentrated.

## Principle 20: FMI links

***An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.***

### **Summary narrative**

DCCC operates within DGCX's vertical trading and clearing model. DCCC does not currently have any link arrangements in place with other FMIs.

## Principle 21: Efficiency and effectiveness

***An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.***

### **Summary narrative**

Design Efficiency and Effectiveness: The Rules, which are publicly available on DCCC's website, are subject to consultation with Clearing Members in respect of proposed additions or amendments. Through meetings with Clearing Members, either bilaterally or in groups, DCCC seeks to meet the needs of its participants and the market in terms of products and services, clearing and settlement operations, risk management functions, and technology.

The DCCC Board and DCCC Risk Committee includes a representative from a Clearing Member. These fora provide a platform to discuss and address participant requirements, considerations and concerns with regards to DCCC's clearing and settlement services and any proposed changes.

Corporate Objectives and Goals: DCCC's documented corporate objectives and goals aim to provide safe and efficient clearing and settlement services while meeting risk management, operational, capital and regulatory requirements of a dynamic global marketplace.

The operational reliability objectives of DCCC's systems and processes are set out in its ERM framework, which provides quantitative and qualitative definitions of risk appetite and tolerance covering core services provided by DCCC (see Principle 17 for more information).

Through regular business, operational and risk management reviews, DCCC assesses its performance against its objectives on an ongoing basis. The CEO reports to the DCCC Board on progress made by DCCC in achieving its business objectives, including an assessment of the risks associated with those business objectives. The DCCC Board also receives updates independently from both the Risk and Compliance & Membership functions. Internal Audit also provides the DCCC Board with regular updates, thereby providing an independent source of assurance on financial, operational and compliance controls.

Review of Efficiency and Effectiveness: Management information, including DCCC's financial performance (budget vs actual), capital requirements, cleared volumes, margin levels, operational incidents and clearing platform/system performance (e.g. critical system uptime and EOD processing) are reviewed monthly.

## Principle 22: Communication procedures and standards

***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.***

### **Summary narrative**

DCCC uses Society for Worldwide Interbank Financial Telecommunication ("SWIFT") for messaging of payment transactions and FIX to message clearing of transactions (including both new transactions and amendments to transactions). These messaging protocols are internationally accepted communication standards and procedures.

## 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, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.***

### Summary narrative

**Disclosure of Rules:** The Rules are publicly available on DCCC's website. DCCC consults with its Clearing Members on all proposed Rule amendments and undertakes prescribed regulatory filing and notification processes, all of which ensure a thorough review and challenge of the clarity and comprehensive nature of the Rules.

DCCC provides a standard Broker/Client Agreement, which provides a mandatory contractual framework for agreements between clients and Clearing Members. These are also publicly disclosed.

**Disclosure of System's Design and Operations:** DCCC publicly discloses on its website the general principles underlying its models and their methodologies. Relevant discretions, rights and obligations reserved to and imposed on DCCC are clearly articulated in the Rules. These, and the agreements executed by Clearing Members, establish Clearing Member rights and obligations, and powers and rights reserved to DCCC to deal with relevant foreseeable circumstances.

**Documentation:** DCCC ensures that its Clearing Members understand the Rules, and risks associated with participating by making them publicly available on its website. DCCC has no knowledge or indication to suggest that its Clearing Members are anything other than sophisticated market participants co-operating fully with DCCC and meeting the relevant obligations and requirements.

In the event that DCCC identifies a Clearing Member whose behaviour demonstrates a lack of understanding of the Rules, the relevant Clearing Member representatives will be challenged to ensure appropriate compliance.

**Disclosure of Fees:** The costs of using DCCC's clearing services are documented in the relevant Notices and are published on its website.

**CPSS-IOSCO Disclosure Framework:** DCCC regularly reviews its responses to the CPSS-IOSCO Disclosure Framework for Financial Market Infrastructures with consideration to changes to its products/services; business and organisation structure; policy, processes and control environment; systems and technology; and the regulatory environment. These responses are publicly disclosed on DCCC's website. DCCC also discloses data on transaction volumes and values for the clearing services that it offers via the DGCX website.

Principle 24: Disclosure of market data by trade repositories

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

This PFMI is not applicable to DCCC.