# ICE CLEAR EUROPE

# Compliance with Principles for Financial Market Infrastructures

## 31 January 2023

**Version 1.1**

CONTENTS

1. INTRODUCTION ... 3
1.1 Assessor and objective ... 3
1.2 Scope of the assessment ... 3
1.3 Scope of coverage of the CCP ... 3
1.4 Institutional and market structure ... 3
1.5 Regulatory structure ... 4
1.6 Summary statistics ... 4
1.7 Information and methodology used for assessment ... 4
1.8 Summary of major changes ... 5
2. ASSESSMENT OF OBSERVANCE ... 6
2.1 Executive summary ... 6
PRINCIPLE 1: LEGAL ... 9
PRINCIPLE 2: GOVERNANCE ... 14
PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS ... 24
PRINCIPLE 4: CREDIT RISK ... 33
PRINCIPLE 5: COLLATERAL ... 42
PRINCIPLE 6: MARGIN ... 46
PRINCIPLE 7: LIQUIDITY RISK ... 58
PRINCIPLE 8: SETTLEMENT FINALITY ... 66
PRINCIPLE 9: MONEY SETTLEMENT ... 68
PRINCIPLE 10: PHYSICAL DELIVERIES ... 71
PRINCIPLE 12: EXCHANGE-OF-VALUE SETTLEMENT SYSTEMS ... 73
PRINCIPLE 13: PARTICIPANT DEFAULT RULES AND PROCEDURES ... 74
PRINCIPLE 14: SEGREGATION AND PORTABILITY ... 78
PRINCIPLE 15: GENERAL BUSINESS RISK ... 81
PRINCIPLE 16: CUSTODY AND INVESTMENT RISKS ... 84
PRINCIPLE 17: OPERATIONAL RISK ... 86
PRINCIPLE 18: ACCESS AND PARTICIPATION REQUIREMENTS ... 91
PRINCIPLE 19: TIERED PARTICIPATION ARRANGEMENTS ... 94
PRINCIPLE 20: FMI LINKS ... 97
PRINCIPLE 21: EFFICIENCY AND EFFECTIVENESS ... 100
PRINCIPLE 22: COMMUNICATION PROCEDURES AND STANDARDS ... 102
PRINCIPLE 23: DISCLOSURE OF RULES, KEY PROCEDURES AND MARKET DATA ... 103

# 1. INTRODUCTION

## 1.1 ASSESSOR AND OBJECTIVE

**Assessor:**

ICE Clear Europe Limited (self-assessment)

**Objective:**

As at 31 January 2023, to assess observance by ICE Clear Europe Limited ("ICEU", "the Clearing House" or "the CCP") with the internationally recognised Principles for Financial Market Infrastructures ("PFMI") published in April 2012 and developed jointly by the Committee on Payments and Market Infrastructures ("CPMI"), formerly known as the Committee on Payment and Settlement Systems ("CPSS"), and the Technical Committee of the International Organization of Securities Commissions ("IOSCO").

Additionally, to assess ICEU's cyber resilience capabilities against the components of the Guidance on Cyber Resilience for Financial Market Infrastructures, published in June 2016 and developed jointly by the CPMI and IOSCO to support the existing PFMI.

## 1.2 SCOPE OF THE ASSESSMENT

The scope of this assessment includes the clearing services provided by ICEU at the date hereof in respect of: the interest rate, equity index, agricultural and energy markets operated by ICE Futures Europe ("IFEU") (a UK recognised investment exchange or "RIE"); the energy markets operated by ICE Endex Derivatives B.V. ("ICE Endex") (a regulated market in the Netherlands); the energy markets operated by ICE Futures U.S. ("IFUS") (a Designated Contract Market pursuant to the Commodity Exchange Act); the energy markets operated by ICE Futures Abu Dhabi ("IFAD") (a recognised investment exchange located in the Abu Dhabi Global Market); and European over-the-counter ("OTC") credit default swaps ("CDS").

Principles 11 (Central securities depositories) and 24 (Disclosure of market data by trade repositories) are not applicable to ICEU.

Note 1: in this disclosure statement, unless otherwise specified, references to the European Market Infrastructure Regulation ("EMIR") and other relevant EU legislation means such legislation as onshored in the UK with effect from the end of the Brexit transitional period. For further details see Circular C20/163.

Note 2: capitalised terms used but not defined in this document have the meaning given to them in the ICE Clear Europe Clearing Rules.

## 1.3 SCOPE OF COVERAGE OF THE CCP

ICEU's activities cover the following markets and products:

- IFEU, ICE Endex, IFAD and IFUS energy derivative contracts;
- IFEU interest rate, equity index and agricultural derivative contracts; and
- Cleared OTC CDS contracts including certain CDS Indices, European Government Single Names and Corporate Single Names.

## 1.4 INSTITUTIONAL AND MARKET STRUCTURE

The primary function of derivatives markets is to facilitate the management of price risk, by allowing risk to be re-distributed to better suit the requirements of individual market participants. The markets provide standardised trading environments such that all users know what they are trading and where their obligations and risks lie. By entering into a standard exchange traded futures and/or options contract, a certain amount of price assurance can be introduced to mitigate uncertainty and price volatility.

## 1.5 REGULATORY STRUCTURE

ICEU is authorised as a Recognised Clearing House under the UK Financial Services and Markets Act 2000 and supervised by the Bank of England. ICEU is also: (i) designated as a derivatives clearing organization by the U.S. Commodity Futures Trading Commission ("CFTC"); (ii) recognised by the European Securities and Markets Authority ("ESMA") as a third-country central counterparty under the European Market Infrastructure Regulation ("EMIR"); (iii) recognised as a foreign central counterparty by the Swiss Financial Market Supervisory Authority ("FINMA"); (iv) recognised as a remote clearing house by the Abu Dhabi Global Market ("ADGM") Financial Services Regulation Authority ("FSRA"); and (v) recognised as an inter-bank payment system under the Banking Act 2009.

ICEU also provides clearing services for European CDS contracts. In addition to Bank of England supervision, ICEU's CDS clearing service operates as a securities clearing agency ("SCA") and a covered clearing agency ("CCA") under the U.S. Securities and Exchange Commission ("SEC").

ICEU has received settlement finality designation under the Financial Markets and Insolvency (Settlement Finality) Regulations 1999 ("SFR"), which enhances the systemic risk protection provided to Clearing Members in the event of a clearing counterparty default. Under SFR, payment instructions within ICEU's system can be protected from administrators or liquidators of insolvent firms.

## 1.6 SUMMARY STATISTICS

ICEU clears approximately over 5 million contracts every day and, as at 31 January 2023, with Initial Margin requirements of approximately $132 billion. ICEU has 84 Clearing Members located in various jurisdictions including: France, Germany, Italy, Spain, Sweden, Switzerland, the Netherlands, the United Kingdom and the United States of America.

ICEU 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 ICEU in order that it can continue to meet its obligations to non-defaulting Clearing Members: (i) the defaulter's initial Margin; (ii) the defaulter's Guaranty Fund contribution; (iii) ICEU's own capital contribution; (iv) default insurance (subject to specific provisions of Parts 9 and 11 of the ICEU Clearing Rules) (v) the Guaranty Fund contributions of non-defaulting Clearing Members; and (v) Powers of Assessment as described in the ICEU Clearing Rules.

As at 31 January 2023, minimum clearing member requirements in the Guaranty Funds of approximately $4.7 billion (F&O total of $3.2 billion and CDS total of $1.5billion), with additional ICEU's contribution of $247million (F&O total contribution of $197million and CDS total contribution of $50million).

## 1.7 INFORMATION AND METHODOLOGY USED FOR ASSESSMENT

The approach for the review uses the assessment methodology described in the PFMI. The PFMI sets out standards for risk management of a CCP. These recommendations are recognised and have been used by national regulators (including the Bank of England) and other firms for self-assessment purposes.

Responses contained herein draw on a wide variety of ICEU's existing rules, policies and procedures. It has also considered the Bank of England's feedback from its review of the 2019 PFMI submission.

Supplementary to these responses is a Cyber Resilience PFMI Annex, which assesses observance by ICEU of the Guidance on Cyber Resilience for Financial Market Infrastructures. The Cyber Guidance does not establish additional standards for FMIs beyond those already set out in the PFMI but is intended to be supplemental to the PFMI.

## 1.8 SUMMARY OF MAJOR CHANGES

Since the date of ICEU's previous PFMI disclosure statement, the following ad hoc changes have been implemented.

- Switch from a De Nederlandsche Bank account to a European Central Bank account to deposit EUR on account in the Payments Module ("PM") of TARGET2 (March 2021);
- Addition of IFAD reference following the launch of the new market cleared by ICEU (March 2021);
- Addition of State Street as a financial service provider and as a custodian for US Treasuries (July 2021);
- Removal of reference to the Customer Protection Framework which has been retired, as the relevant information is already captured by the ICEU EMIR Disclosure Statement (July 2021);
- Update to Principle 1 to reflect the extension granted by ESMA to ICEU`s temporary recognition until 30 June 2025 (May 2022); and
- Update to Principle 4 to reflect the increase in ICEU's Default Insurance Cover from $75million to $100million (September 2022).

## 2. ASSESSMENT OF OBSERVANCE

### 2.1 EXECUTIVE SUMMARY

This assessment used the "Recommendations for Central Counterparties" ("RCC") developed jointly by the CPSS/CPMI and IOSCO.

The purpose of the assessment was to confirm whether the policies, procedures and methods used by ICEU to manage the risks it faces as a CCP meet the regulatory expectations set out in the PFMI.

*Summary of key arrangements*

As a CCP, ICEU's systems are designed to protect the financial integrity of the markets for which it provides clearing services by maintaining collateral, facilitating payments and collections, and limiting counterparty risk. Positions are marked to market at least daily, and in some cases at regular intervals throughout the day. ICEU maintains a comprehensive set of rules, policies and procedures in addition to customer protection, risk management and governance frameworks.

ICEU currently provides clearing services in relation to: IFEU; ICE Endex; IFAD; IFUS Energy Division; and European OTC CDS contracts. ICEU has also developed an OTC FX clearing service which has received all necessary regulatory approvals but for which a launch date has yet to be set. The clearing services generically include, inter alia:

(a) Trade registration and position management;

(b) Collection of Margin and collateral and associated activities;

(c) Treasury, cash payment/receipt and billing;

(d) Clearing risk management;

(e) Default management; and

(f) Contract expiry and deliveries.

ICEU accepts transactions on the basis of an open offer mechanism for exchange-traded derivatives and on the basis of novation for OTC CDS contracts, pursuant to which contracts arise automatically on the occurrence of certain events. Under an open offer mechanism, at the point an open buy order matches with an open sell order at the relevant market, ICEU will become the buyer to the seller and the seller to the buyer. For off-screen trades which are registered with ICEU for clearing (i.e. Block Trades, Exchange for Physical and Exchange for Swaps) a contract will form upon complete details being sent to the relevant market and accepted through their systems at which point ICEU becomes counterparty to the trade based on open offer. Under the novation mechanism, ICEU will become buyer to every seller and seller to every buyer at the point that the trade is registered with ICEU and in accordance with the ICEU Clearing Rules.

Whenever a Contract is recorded in a Customer Account of a Clearing Member, a back-to-back Customer-Clearing Member Transaction with equal terms will also arise between the Clearing Member and its Customer. The liabilities and obligations of ICEU will extend only to, and be enforceable only by, Clearing Members. Some contracts will be void from inception, and some via a 'filter mechanism' enable ICEU to avoid clearing certain transactions. ICEU can also request additional Margin or restrict a Clearing Member from increasing its open position, inter alia, if a Clearing Member exceeds its Position Limit.

ICEU's clearing systems (described below) receive details of trades in real-time from the relevant market. Affirmed OTC CDS trades are registered with ICEU through either a daily or weekly clearing cycle for older transactions or a real-time clearing cycle for transactions carried out on the Approved CDS Trade Execution Platforms. ICEU becomes counterparty to the trade through the process of novation.

ICEU receives only validated data in relation to both matched trades and block trades. The trading systems are designed to ensure that only details of matched trades or complete block trades are passed to ICEU for clearing. However, ICEU retains a right to reject contracts in the event of an error.

Clearing Members have rights and obligations set out in the ICEU Clearing Rules and a Clearing Membership Agreement ("CMA") and, where applicable, an additional addendum to the Clearing Membership Agreement. Every Clearing Member agrees to be contractually bound by the ICEU Clearing Rules as a result of becoming a Clearing Member.

*Information Technology, including cybersecurity*

ICEU's IT functions, systems and services are predominantly outsourced to other ICE entities which include Intercontinental Exchange, Inc. ("ICE"), IFEU and ICE Clear Credit ("ICC"). The ICEU IT team is responsible for overseeing and supporting clearing systems and related IT projects, in particular system design (definition of business and functional requirements), project management and co-ordination of internal and external UAT as part of the overall ICE system development lifecycle. The ICEU IT team works collaboratively with ICE, ICC's Development and QA teams, ICEU business teams and relevant external parties (e.g. Clearing Member firms) to ensure that the functionality of new/modified systems is acceptable and meets the intended business requirements.

ICEU's operations rely on the following key systems environments: post trade administration and clearing, banking and collateral management, risk management and deliveries.

ICEU's primary systems comprise:

a) Post-trade administration/clearing: Post Trade Management System/Allocation Claim Management System (combined "ICE FEC") and CDS Trade Management System;
b) Primary exchange integration component for cleared exchange traded derivatives: Hercules;
c) Post-trade connectivity and middleware platform for the CDS market: ICE Link;
d) Treasury, banking and collateral management: Extensible Clearing System ("ECS") and ICE SWIFT Gateway ("ISG");
e) Clearing risk management systems: PRSK, ECS, Intra-day Risk System (Oracle based);
f) Default managements: ICE's Default Management System ("DMS");
g) Delivery systems: Guardian; Deliveries for ICE ("DICE");
h) Bond and equity settlement: Settlements Processing for ICE ("SPICE");
i) Billing and finance systems: Platform Billing, Revenue Management and Billing ("RMB"), Crystal Reports;
j) Central data repository: Enterprise Data Warehouse; and
k) Managed File Transfer system ("MFT").

ICEU, its parent (ICE) and other entities within the ICE group operate under a single information security policy and security organisation. ICE has also formally documented its strategy for managing cyber risk through a Cyber Security Strategy (“CSS”).

The CSS complements ICE’s information security policy and procedures by capturing the organisation’s overarching intent in managing cyber risk. The CSS been developed in accordance with the National Institute of Standards and Technology (“NIST”) Cyber Security Framework.

The CSS and security policy and procedures are overseen by the ICE Operational Oversight Committee (“OOC”) at which ICEU is represented by relevant members of the Senior Management of the Clearing House, including its President and COO. Intra-group service arrangements are underpinned by formal contractual arrangements. The CSS is reviewed on annual basis by the ICEU Board.

## PRINCIPLE 1: LEGAL

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

| Key Consideration 1 | The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions. |
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The following are the material aspects of ICEU's activities that require a high degree of legal certainty:

- Legal enforceability of fees, Margin calls, guaranty fund contributions and other payment obligations;
- Terms, settlement arrangements and (where relevant) delivery mechanics for cleared contracts;
- ICEU Clearing Rules, including Part 9 Default Rules (which contain netting provisions);
- Settlement finality;
- APS bank network, concentration bank arrangements, investment programme; and
- Enforceability of disciplinary and disputes provisions.

The ICEU Clearing Rules, which provide details of cleared contracts and the material aspects of ICEU's operations, are governed by the laws of England and Wales (Rule 102(s)). England and Wales is the principal jurisdiction in which ICEU operates and is incorporated and regulated.

ICEU is part of the Intercontinental Exchange, Inc. ("ICE") group, and was incorporated in England and Wales on 19 April 2007 as a private limited company under the Companies Act 1985 (as amended) with registered number 06219884. ICEU's registered office is at 5th Floor, Milton Gate, 60 Chiswell Street, London EC1Y 4SA. ICEU operates from its registered address. ICEU was formed to provide clearing services to certain markets operated by the ICE group of companies, including certain OTC contracts. The provision of clearing services commenced on 3 November 2008.

ICEU is authorised as a Recognised Clearing House ("RCH") under section 286 of the Financial Services and Markets Act 2000 ("FSMA") and supervised as such by the Bank of England. Recognition as an RCH was granted on 12 May 2008. As an RCH, ICEU is subject to the Financial Services and Markets Act 2000 ("Recognition Requirements for Investment Exchanges and Clearing Houses") Regulations 2001 (SI 2001/995) ("Recognition Requirements") and the relevant parts of the Bank of England's policies, rules and standards.

On 19 September 2016 ICEU was authorised as a central counterparty under Article 14 of EMIR and recognised as a central counterparty under section 290(1)(b) of FSMA. As such, ICEU is subject to EMIR, as onshored in the UK, with certain modifications, with effect from 1 January 2021, together with associated regulatory technical standards and provisions of the applicable Recognition Requirements, including Part 5 (Recognition Requirements for Central Counterparties) and Part 6 (Recognition Requirements Applying to Central Counterparties: Default Rules) of the Schedule to the Recognition Requirements.

On 25 September 2020, ICEU was recognised by ESMA as a Tier 2 third-country CCP pursuant to Article 25 of EMIR (as such legislation applies in the EU), with effect from 1 January 2021 until 30 June 2022. This temporary recognition was subsequently extended to 30 June 2025.

In December 2018, the Swiss Financial Market Supervisory Authority (FINMA) recognised ICEU as a foreign central counterparty.

ICEU is also registered as a DCO with the CFTC and as a CCA/SCA with the SEC.

In April 2020, ICEU was granted a Recognition Order as an RCH by the ADGM FSRA. The recognition allows ICEU to offer clearing services to firms based in the ADGM.

The clearing services currently support exchange markets operated by IFEU (a UK recognised investment exchange or "RIE"), the energy markets operated by ICE Futures US ("IFUS"), the markets operated by IFAD (a recognised investment exchange located in the ADGM), the markets operated by ICE Endex Market B.V. ("ICE Endex") and ICE Endex Gas Spot Limited ("ICE Endex UK"). In addition, ICEU clears European CDS.

ICEU takes legal advice in relation to insolvency, the regulation of clearing houses, markets, central counterparties, the enforceability of contracts and the ICEU Clearing Rules, close-out netting, enforceability of collateral, choice of law, jurisdiction, enforceability of disciplinary powers and other relevant material aspects of ICEU's operations in the UK, the US and all jurisdictions in which ICEU has Clearing Members (plus Belgium and Luxembourg). This has informed its decisions in relation to the jurisdictions where it accepts Clearing Members (Rule 201(a)(xxxi)) and Rule 202(a)(xiv)(F)).

| **Key Consideration 2** | **An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.** |
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Each Clearing Member accedes to the ICEU Clearing Rules and Procedures through execution of the standard form Clearing Membership Agreement ("CMA"). Implicit in this accession is that the ICEU Clearing Rules and Procedures are sufficiently clear and understandable to be accepted and agreed.

ICEU Clearing Rules (including the Procedures) are publicly available at:

https://www.theice.com/clear-europe/regulation

Throughout the evolution of the ICEU Clearing Rules and Procedures, various third parties have contributed to the development of the ICEU Clearing Rules and Procedures. The ICEU Clearing Rules and Procedures were drafted in consultation with, and continue to be drafted with the assistance of, external counsel; various consultations have been undertaken by ICEU in relation to amendments to the ICEU Clearing Rules and Procedures, providing prospective and actual Clearing Members with an opportunity to review and suggest amendments; and the ICEU Clearing Rules and Procedures have at various stages been, and continue to be, subject to regulatory filing processes and regulatory review.

In addition, ICEU sets out on its website an EMIR disclosure statement which provides a clear description, in non-legal language, of various key aspects of clearing and the ICEU Clearing Rules.

ICEU's EMIR disclosure statement is publicly available at:

https://www.theice.com/publicdocs/clear_europe/ICEU_EMIR_Disclosure_Statement.pdf

These levels of third-party engagement and disclosures provide assurance that the ICEU Clearing Rules and Procedures are clear and understandable.

ICEU has close working relationships with its regulators and an ongoing consultative and advisory relationship with external counsel. This ensures that ICEU is fully apprised of relevant laws and regulations and that its ICEU Clearing Rules, Procedures and legal opinions are consistent with relevant laws and regulations. Rule changes are required to be filed with and approved by relevant regulators in advance of implementation as part of prescribed regulatory processes. In general, proposed changes to the Clearing Rules are also consulted on with Clearing Members prior to implementation.

ICEU has also implemented a Compliance Monitoring and Testing Programme ("CMTP") that is designed to monitor and test ICEU`s adherence to relevant regulatory requirements.

Given the rate of regulatory changes for clearing, new enhancements are regularly identified and proposed, and the Clearing Rules and Procedures are routinely considered when assessing the impact of regulatory-driven initiatives.

ICEU's regulators are given notice of and/or approve (depending on the nature of the change and the specific regulator's requirements) all proposed changes to the ICEU Clearing Rules and Procedures. The Bank of England and ESMA are given details of proposed changes via email and regular update calls and meetings, whilst regulatory filings setting out proposed changes are submitted to and approved by the CFTC and the SEC prior to implementation. ICEU liaises with FINMA and the ADGM FSRA in respect of those changes relevant to ICEU's status in those jurisdictions.

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| **Key Consideration 3** | **An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.** |

The legal basis for ICEU's activities is articulated through the regulatory approval and authorisation processes with the following relevant authorities:

- Bank of England under the Recognition Requirements and EMIR (with respect to RCH/recognised central counterparty status);
- ESMA (with respect to third country CCP status);
- CFTC (with respect to DCO status);
- SEC (with respect to CCA/SCA status);
- FINMA (with respect to Remote Clearing House status);
- ADGM FSRA (with respect to foreign central counterparty status); and
- Sponsored Principal jurisdictions covering applicable local licensing requirements.

Clearing Members and Clearing Members' customers can view information regarding the legal basis for ICEU`s activities, which is publicly available at:

https://www.theice.com/clear-europe/regulation

ICEU also regularly publishes Circulars, which are sent to Clearing Members and anyone who signs up to the Circular mailing lists. Circulars are published on the ICE group website here:

https://www.theice.com/clear-europe/circulars

Circulars are another way that Clearing Members and their customers can obtain information regarding the legal basis for ICEU's activities. For example, Circulars detailing proposed changes to the ICEU Clearing Rules explain the proposed changes in a clear and understandable way.

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| **Key Consideration 4** | **An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.** |

ICEU’s legal counsel obtain external legal opinions on the enforceability of the ICEU Clearing Rules in all the jurisdictions where Clearing Members are based.

ICEU’s regulators are given notice of and / or approve (depending on the nature of the change and the specific regulator’s requirements) all proposed changes to the ICEU Clearing Rules and Procedures. ICEU is also required to hold public consultations on the majority of such changes. These processes ensure that regulators and Clearing Members have the opportunity to consider and challenge the proposed changes, including with respect to enforceability in specific jurisdictions.

Key contractual documentation, such as the Clearing Membership Agreement (“CMA”) and the contracts that govern the APS bank and concentration bank arrangements, are drafted with the assistance of and reviewed by external counsel, which gives ICEU a high degree of certainty in respect of a range of contractual features, including enforceability in specific jurisdictions.

ICEU achieves a high degree of certainty that its rules, procedures and contracts will not be voided, reversed or subject to stays on the basis of legal enforceability opinions, external counsel drafting and review of key contractual documents (such as the Clearing Member Agreement) and the consultation process.

ICEU is also the operator of a Designated System for the purposes of the UK Settlement Finality Regulations, with the effect that certain protections against the operation of normal UK insolvency law are afforded to ICEU in respect of Transfer Orders, collateral security, rules on the settlement of Transfer Orders and default arrangements of ICEU and net sums declared by ICEU.

As a result of Brexit and the end of the transition period on 31 December 2020, ICEU (in conjunction with external counsel) assessed what was required to obtain settlement finality protections in the non-UK jurisdictions where it has Clearing Members.

ICEU is a recognised central counterparty under Part VII of the Companies Act 1989, with the effect that certain proceedings of ICEU (e.g. default rules, default proceedings, liquidation of Clearing Member's proprietary and customer account positions and related Margin, and transfers of Clearing Member account positions and related Margin) take precedence over insolvency procedures.

The UK Settlement Finality Regulations, the equivalent EU national settlement finality protections and Part VII of the Companies Act 1989 combine to significantly reduce the risk that actions taken by ICEU in managing a default would be subject to successful legal challenge.

Some legislative initiatives at European level, notably Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms, do not exempt CCPs from bail-in or stays on resolution in all circumstances. Such matters are outside the control of ICEU and it has sought legal advice to mitigate this risk.

ICEU has also issued information to its Clearing Members explaining the documentation requirements to ensure that clients have agreed to the relevant Standard Terms applicable to Customer-Clearing Member Transactions.

| **Key Consideration 5** | **An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.** |
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Under EMIR, ICEU is required to identify and analyse potential conflict-of-law issues and to develop rules and procedures to mitigate legal risk resulting from such issues, and if necessary, to seek independent legal opinions for the purpose of that analysis. ICEU has therefore obtained legal opinions in all Clearing Member jurisdictions to, amongst other things, identify and analyse conflict-of-law issues and to ensure that the ICEU Clearing Rules are enforceable in the respective jurisdictions.

Conflict-of-law issues identified in the legal opinions include governing law and insolvency issues. Governing law issues are addressed through clear governing law provisions in the ICEU Clearing Rules and Procedures and via appropriately designed contracts. Insolvency issues are addressed by reliance on Part VII of the Companies Act 1989 (which includes specific provisions on the non-enforceability of contrary foreign judgments in relation to insolvency law) and the UK Settlement Finality Regulations (and national EU equivalent protections). In the event that any other conflict-of-law issues arise that are not addressed through governing law provisions or UK legislation, ICEU would seek to ensure that such conflict was addressed as appropriate by working with local counsel and making rule amendments.

## 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.**

| Key Consideration 1 | An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations. |
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ICEU was launched in 2008 and its principal activity is the provision of clearing services to certain markets within the ICE Group and for certain over-the-counter contracts.

ICEU's strategy is designed to complement a diverse market while meeting the risk management, capital and regulatory requirements of a dynamic global marketplace. ICEU clears, settles and guarantees the financial performance of F&O contracts. ICEU also clears certain OTC CDS instruments.

ICEU's core objectives are aligned with those of the ICE Group Clearing Houses, and include:

Operating a Clearing House that provides stability to the financial markets while providing fair and open access to clearing and sound risk management services;

Preventing, detecting, tracking and mitigating cyber incidents;

Provide, reliable, scalable and innovative clearing technology; and

Maintaining and grow ICEU's clearing and risk management services.

The core objectives noted above are mapped to the ICEU Risk Register and Risk Appetite Metrics which ensures that the ICEU Board has oversight of whether these core objectives are being met on an ongoing basis.

ICEU's risk governance arrangements and its risk management framework are designed to promote safety and efficiency whilst supporting the stability of the broader financial system, other relevant public interest considerations and the objectives of relevant stakeholders. ICEU have defined incident management policies and procedures for risks that threaten the efficiency of its operations, asset protection, safeguards and continuity of its important business services.

As required under Article 28 of EMIR, ICEU has established an advisory Board level risk committee, the Client Risk Committee ("CRC"), which is composed of representatives of its Clearing Members, clients and Independent Non-Executive Directors "(INEDs"). In accordance with the Terms of Reference of the CRC, none of the groups of representatives have a voting majority within the CRC.

In addition to the CRC, ICEU has also established a Board Risk Committee ("BRC") which is comprised of Non-Executive Directors, the majority of whom must be INEDs.

The BRC considers matters presented by management and, where necessary, either approves or makes recommendations to the ICEU Board to approve.

As well as the Board level risk committees, two advisory Product Risk Committees ("PRCs") have been constituted under the President's authority, which service the CDS and F&O sides of the ICEU business.

The CDS PRC is comprised of appointees nominated by CDS Clearing Members, an INED, who acts as Chair and includes a senior representative of ICEU. The CDS PRC's responsibilities are limited to the clearing of CDS contracts, and the criteria for CDS Clearing Membership and is, on behalf of the CDS Clearing Membership as a whole, to ensure ICEU maintains and implements agreed procedures, processes and controls which are designed to protect the integrity of the CDS Guaranty Fund and to ensure that ICEU can successfully manage the default of a CDS Clearing Member. The CDS PRC is responsible for advising the Board on the continued adequacy of the key policies and controls designed to manage counterparty risk and to cover market risk for CDS contracts.

The F&O PRC is comprised of appointees nominated by F&O Clearing Members and an INED, who acts as Chair. The F&O PRC's responsibilities are limited to the clearing of F&O Contracts and the criteria for F&O Clearing Membership and is, on behalf of the F&O Clearing Membership as a whole, to ensure that ICEU maintains and implements agreed procedures, processes and controls designed to protect the integrity of the F&O Guaranty Fund and to ensure that ICEU can successfully handle the insolvency of an F&O Clearing Member. The F&O PRC is responsible for advising the Board on the continued adequacy of the key policies and controls designed to manage counterparty risk and to cover market risk.

ICEU has also adopted a structured three-lines of defense model for managing risks:

(i) business lines and support functions (e.g. Clearing Risk, Operations, Legal, Treasury and Banking) that manage day-to-day risks;

(ii) risk oversight services (Compliance, Risk Oversight, Information Security, Business Continuity) which create and oversee ICEU's risk framework, related policies and their implementation; and

(iii) Internal Audit function and ICEU's external auditors.

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| **Key Consideration 2** | **An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.** |

ICEU's constituent documentation, comprised of its Articles of Association and the Board and Board Committees' Terms of Reference/Matters Reserved, specify the governance arrangements for the Board and shareholder(s), as appropriate.

In terms of relevant governance requirements, there are a number of pieces of relevant legislation, including EMIR, the UK Companies Act 2006 (as amended) and legislation in other jurisdictions in which ICEU is regulated.

The Board, through the Articles of Association, ICEU Clearing Rules and relevant Board resolutions, have delegated certain authority to members of the ICEU management.

With regard to the lines of responsibility, the Board has four standing committees, each of which has separately agreed Terms of Reference that set out their roles and responsibilities.

The Board's standing committees are:

- Audit Committee;
- Board Risk Committee;
- Client Risk Committee; and
- Nominations and Compensation Committee.

Each of the standing committees fulfil various statutory, regulatory and corporate governance requirements, providing oversight and assurance to the Board. However, the CRC operates in an advisory capacity only.

Independence of Directors, in all cases, is determined by the definition contained within Article 2(28) of EMIR.

Details of the responsibilities and composition of each committee are set out below:

Audit Committee

The Audit Committee is a committee of the Board, responsible for providing oversight and assurance to the ICEU Board in relation to annual financial statements and financial reporting, legal, compliance, and financial crime, internal audit and external audit.

Per the Terms of Reference, the Audit Committee may consist of up to five members, all of whom shall be Independent Non-Executive Directors, at least one of whom shall have recent and financial experience and with competence in accounting and/or auditing and at least one member shall also be a member of the BRC. The Chair shall be an INED.

Board Risk Committee

The BRC is a committee of the Board, responsible for providing oversight and assurance to the ICEU Board in relation to risk appetite and risk profile, risk policies, internal controls and risk control framework, liquidity, technology operations, technology governance, cyber risk and business continuity planning and the Risk Oversight department and Chief Risk Officer.

Per the Terms of Reference, the BRC may consist of up to five Committee Members, all of whom must be Non-Executive Directors and at least three must be ICEU INEDs and at least one member must be a member of the Audit Committee.

Client Risk Committee

The CRC is a committee of the Board, responsible for providing advice to the Board to enable it to ensure that ICEU maintains and implements appropriate risk management policies, processes and controls in line with regulatory requirements.

Per the Terms of Reference, the CRC may consist of up to eleven Committee Members (excluding the Chair) and shall include up to four Clearing Member Representatives, four Customer Representatives and up to three INEDs. The Chair shall be an INED of ICEU.

Nominations & Compensation Committee

The Nominations & Compensation Committee is a committee of the Board and is responsible for providing oversight to the Board in relation to: composition of the Board and its committees; Board evaluation; succession planning for both Board and Senior Management; appointments and/or re-appointments to the Board; and compensation matters, including the application of the ICEU Compensation Policy and assurance that second and third line function compensation, is not linked to ICEU performance and appropriate.

Per the Terms of Reference, the Nominations & Compensation Committee may consist of up to five Committee Members the majority of whom must be INEDs.

Product Risk Committees

ICEU operates separate product specific Risk Committees for CDS and F&O products, which are constituted under the President's authority and operate in an advisory capacity. The two PRCs play a key advisory role in relation to ensuring that ICEU maintains and implements procedures, processes and controls that are designed to:

- Protect the integrity of the guaranty fund;
- Ensure that ICEU can successfully manage the default of a CDS or F&O Clearing Member;

- Manage and mitigate counterparty and market risks; and
- Review the clearing of new CDS or F&O products.

The CDS PRC consists of up to fourteen members, including the following:

- An INED of the ICEU Board, who will act as Chair;
- One of the ICEU President or Head of First Line Clearing Risk;
- Up to twelve CDS Clearing Member representatives.

The F&O PRC consists of up to sixteen members, including the following:

- An INED of the ICEU Board, who will act as Chair; and
- Up to fifteen F&O Clearing Member representatives.

Executive responsibilities

The executive responsibility for the day-to-day management and operations of ICEU rests with the President. The President delegates responsibilities to the Senior Management Team, as appropriate. ICEU's Management Committees are:

- Executive Risk Committee; and
- Model Oversight Committee.

Executive Risk Committee

The Executive Risk Committee ("ERC") is a committee constituted by the ICEU President. The ERC considers and reviews key aspects of risk management and assists the Chief Risk Officer in ensuring that all risks across ICEU are captured and appropriately managed. Where appropriate, the ERC makes recommendations to the ICEU Board or other Committees within the ICEU.

The President acts as Chair of the ERC. In the absence of the President or at their request, the Chief Operating Officer will serve as Chair of the ERC. The ERC consists of the following voting Committee Members:

- President;
- Chief Operating Officer;
- Chief Risk Officer;
- Head of Risk;
- Head of Regulation & Compliance;
- Head of Corporate Development; and
- Head of Treasury.

The following non-voting Committee Members also attend meetings of the ERC:

- Group Head of Finance EMEA;
- Head of Legal;
- Head of Information Security EMEA; and
- Senior Director - Internal Audit.

Model Oversight Committee

The Model Oversight Committee is a committee constituted by the President. The Model Oversight Committee considers and reviews key aspects of model risk management, in accordance with ICEU Model Risk Governance Framework and assists the Chief Risk Officer to ensure all model-related risks across ICEU are captured and properly managed. Where appropriate, the Committee makes recommendations to the ICEU Board or other committees within ICEU. The Head of Risk chairs the Model Oversight Committee and has the following members:

- President;
- Chief Operating Officer;
- Chief Risk Officer;
- Head of Risk Solutions; and
- Head of Regulation & Compliance.

ICEU is not a central bank-operated FMI.

Accountability to owners, participants and other stakeholders is achieved by the following methods, as appropriate:

- The Board includes one executive and two non-executive directors, who are nominated by the shareholder amongst a total of ten;
- The CRC includes representatives of Clearing Members and their clients;
- The F&O PRC includes F&O Clearing Members and INEDs;
- The CDS PRC includes CDS Clearing Members and INEDs;
- Rule amendments and business initiatives are consulted on with Clearing Members and market participants, as appropriate;
- Information is made available upon request to the relevant authorities; and
- On-going engagement and relationships with relevant regulatory authorities.

Please see response to 2.2, the Articles of Association are publicly available at Companies House. Additional information can be found on the ICEU website.

| **Key Consideration 3** | **The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.** |
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The composition, role and responsibilities of the Board and Board committees are contained in various documents, policies, procedures and processes, such as:

- Articles of Association;
- Directors' duties as codified under Chapter 2 of Part 10 of the Companies Act 2006 for the Board;
- Board Matters Reserved / Terms of Reference;
- Committee Terms of Reference; and
- Letters of appointment for the Board and Board Committees.

The Board is collectively responsible to ICEU's shareholder for the long-term success of ICEU, exercising all of the powers of ICEU, subject to any relevant laws and regulations and in accordance with the Articles of Association. In particular, the Board takes into account the Directors' duties contained in the Companies Act 2006. The Board's Terms of Reference / Matters Reserved includes those items which cannot be delegated by the Board, as well as those items which the Board will take direction from its various committees.

The Board's role is to provide leadership of ICEU within a framework of prudent and effective controls which enables risk to be appropriately assessed and managed.

As part of its decision-making process, the Board must have due regard to ICEU's systemic importance to market and financial stability and takes into account ICEU's impact on its (internal and external) stakeholders. The Board works with management to help to ensure that ICEU fosters a relationship of trust with its stakeholders.

In addition to the Board Terms of Reference / Matters Reserved, as noted above, each of the Board's committees have agreed Terms of Reference, which direct committee operations.

The Companies Act 2006 requires Directors to avoid a situation in which they have or can have direct or indirect interests that conflict or possibly may conflict, with the interests of ICEU. There are circumstances in which the duty is not infringed, including if the matter is authorised by directors or the shareholder. Directors can be authorised where, amongst other things, there is nothing in ICEU's constitution to invalidate the authorisation. In relation to conflicts of interest ICEU considered the relevant regulatory requirements, including EU and UK EMIR, the ESMA Guidelines on CCP conflict of interest management and the CFTC and SEC requirements.

The ICE Global Code of Business Conduct and ICEU Conflicts of Interest Policy set out requirements for identifying, disclosing and managing potential conflicts that apply to all Directors and staff. The ICEU Conflicts of Interest Policy also, as an appendix, contains a register of potential conflicts of interest which outlines the different categories of conflicts of interest that may arise between, and among, the various stakeholders of ICEU, including Clearing Members and their Client, ICEU itself and the related systems and control in place to manage these conflicts, should they arise. The Conflicts of Interest Policy is reviewed on an annual basis.

ICEU's Articles of Association provides for circumstances in which a Director can have a conflict of interest, including allowing the Director to be party to, or otherwise be interested in, any transaction or arrangement with ICEU or in which ICEU is otherwise interested. This is subject to Directors disclosing the nature and extent of any material interest.

Please refer to 2.2 for the details of the Board committees. Relevant responsibilities and obligations are set out in the committees' respective Terms of Reference.

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| **Key consideration 4** | **The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).** |

The ICEU Board is comprised of nine Directors, of whom three have executive roles within ICEU or the ICE Group, one is the Chair, five are independent for the purposes of EMIR but is classed as a CDS Director. Individuals are selected as Directors based on their skills and prior experience and are reviewed by the Nominations and Compensation Committee prior to approval by the Board. The Nominations & Compensation Committee considers a wide range of factors when considering candidates, such as diversity as well as appropriate skills and experience in financial services, risk management and clearing services. ICEU applies vetting and interview processes for all new Board members, key individuals and other staff to ensure that all ICEU staff and Directors are of sufficiently good repute.

In order for ICEU to attract and maintain members of the Board with the appropriate skills, Board member remuneration is reviewed and contains elements consistent with the long-term performance of ICEU.

The Nominations & Compensation Committee is responsible for ensuring that ICEU's compensation is balanced between fixed and variable components and is consistent with risk alignment and ICEU's performance against its corporate objectives. The Compensation Policy is reviewed annually and is subject to independent audit on an annual basis.

The composition of the Board includes one executive, two shareholder representatives, the Chair, fives INEDs but one of whom is the CDS Director.

Certain directors have been classified as independent members of the board under EMIR, i.e. a member of the board who has no business, family or other relationship that raises a conflict of interest regarding ICEU or its controlling shareholders, its management or its Clearing Members, and who has had no such relationship during the five years preceding his membership of the Board.

ICEU discloses its Board composition, which identifies the Directors that it regards as independent – please refer to https://www.theice.com/publicdocs/clear_europe/Organisational_Structure_Objectives_Strategy.pdf

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| **Key Consideration 5** | **The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.** |

ICEU structure and reporting lines are set out in its Organisation Chart with each member of ICEU's staff having clear management reporting lines. The role and responsibilities of each manager is detailed in their job description.

ICEU discloses its management team composition at:
https://www.theice.com/publicdocs/clear_europe/Organisational_Structure_Objectives_Strategy.pdf

The President has the responsibility to set and evaluate the roles and objectives of ICEU's management and can do this through the goal setting and performance review process. The President is evaluated by a Non-Executive Director.

The President keeps under review the experience and mix of skills required of the Senior Management team to manage ICEU's operations and risks with a high degree of integrity. The President is accountable to the Board on these matters (amongst others).

The Nominations and Compensation Committee recommends to the Board nominations for the appointment of Directors, and members of all Board Committees.

ICEU's Risk Oversight Department consists of a Chief Risk Officer, supported by staff members who conduct risk analysis and have a range of reporting responsibilities.

Please also refer to Principle 17 Key Consideration 1 for more details on ICEU staff recruitment and performance management practices.

The Board is responsible for selecting, evaluating, and if necessary, removing the President. The President has the delegated authority of the Board for the removal of management, subject to applicable law.

| Key Consideration 6 | **The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.** |
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ICEU's overarching approach to risk-management is administered according to its Enterprise Risk Management Framework. The framework provides a disciplined approach to identifying, measuring, monitoring and managing risks. It is structured around the three lines of defence model, well-defined governance arrangements, and through the articulation of the risk taxonomy, risk registers, risk appetites, limits and policies, frameworks and procedures (see Principle 3, Key Consideration 1, for further details on the Enterprise Risk Management Framework and its supporting documentation).

The Board, its delegated committees, and the ERC assess ICEU's risk tolerance performance by reviewing risk appetite metrics, risk reporting, financial statements and compliance reports on a periodic basis. Risk reporting includes emerging risks, status of the risk indicators and residual risk levels.

The Enterprise Risk Management Framework is supported by governance arrangements that establish the decision-making process for risk-related aspects within ICEU. For instance, material model risks are approved by the Model Oversight Committee and the Board or its delegated committee. The policies, procedures and other related documentation forming the framework define ownership of risk, also determining the surrounding responsibilities for its identification, measurement, monitoring and management. Overlaying these specific determinations of responsibility and accountability within ICEU is the three lines of defense model, which broadly establishes that the First Line owns the risks, the Second Line oversees them, and the Third Line provides independent assurance of the work performed. ICEU's decision making in crises and emergencies is also covered by the framework and its governance arrangements, being supported by the following list of non-exhaustive policies and procedures (see Principle 17 Key Consideration 6, for further details on ICEU's crisis and communication management processes) and also determining the surrounding responsibilities for its identification, measurement, monitoring and management. Overlaying these specific determinations of responsibility and accountability within ICEU is the three lines of defense model, which broadly establishes that the First Line owns the risks, the Second Line oversees them, and the Third Line provides independent assurance of the work performed. ICEU's decision making in crises and emergencies is also covered by the framework and its governance arrangements, being supported by the following list of non-exhaustive policies and procedures (see Principle 17 Key Consideration 6, for further details on ICEU's crisis and communication management processes):

- Business Recovery;
- Wind Down;
- Disaster Recovery and Business Continuity;
- Default Management;
- Incident Management and Response; and
- Cyber Security and Threat Responses.

The Board is ultimately responsible for establishing, enforcing and maintaining the Enterprise Risk Management Framework. As such, applicable additions, modifications or exclusions from the framework are approved by the Board or its delegated committees. In particular, the Board, its delegated committees, together with Senior Management and staff regularly review ICEU's policies, procedures and controls to ensure that they continue to be consistent with ICEU current practices and the purposes for which they were designed. Policies are considered and approved by the Board, on recommendation from the relevant Board committee; procedures are considered and approved by the ERC. Finally, ICEU also operates within the relevant policies and procedures of ICE, as appropriate. Oversight and management of the Enterprise Risk Management Framework is further outlined in Principle 3.

The Clearing Risk department is responsible for the management of ICEU's credit and market risk, including, amongst other activities, the setting of Margin, the sizing of ICEU's Guaranty Funds, related back-testing and stress testing, as well as the application of ICEU's internal credit rating system.

The role of the Risk Oversight department is to facilitate and oversee the management of business and operational risks of ICEU, including, but not limited to, those emanating from the front-end clearing functions such as Clearing Risk, Treasury and Banking Services and Operations.

The Chief Risk Officer reports both to the President and the Board Risk Committee Chair.

The Risk Oversight department is a team of twelve permanent staff including the Chief Risk Officer. The authority of the Risk Oversight department is derived from its Charter.

The Executive Risk Committee is a formal part of ICEU's governance arrangements with the mandate of advising on all key aspects of risk management and to assist the Chief Risk Officer in ensuring all risks across ICEU are captured and appropriately managed and make proposals for review by the relevant committees and/or the Board, as appropriate.

The ICE Group operates a single global Internal Audit function that is independent from the activities of the business and provides Internal Audit services to ICEU. The arrangements for the supply of internal audit services by ICE to ICEU are governed by the Master Outsourcing Agreement. The scope of its work and its detailed responsibilities are set out in the ICE Inc. Internal Audit Charter which is published on the ICE website. Broadly speaking, Internal Audit's work is focused on evaluation of governance, risk management and key controls mitigating current and evolving risks to ICEU and assessing the effectiveness of risk management strategies in the context of the current and expected business environment. In addition, Internal Audit also carries out special investigations and undertakes work required by regulators, or to validate remediation of regulatory reported matters.

The London-based Internal Audit Senior Director reports functionally to the ICE Chief Audit Executive and to the ICEU Board and to the ICEU Audit Committee which provides the Board with oversight and recommendations on matters of importance to ICEU's financial and operational conditions such as financial information, systems and controls, project assurance and legal and regulatory compliance. Opportunities for improving management control may also be identified during internal audits, which are escalated to the appropriate level of management.

The staff of the Internal Audit Function are authorised to:

- Have unrestricted access to all functions, records, property, and personnel;
- Have full and free access to the Audit Committee;
- Allocate resources, set frequencies, select subjects, determine scopes of work, and apply the techniques required to accomplish audit objectives; and
- Obtain the necessary assistance of personnel in units of the organisation where they perform audits, as well as other specialised services from within or outside the organisation.

The London based audit team uses the resources, tools, methodologies and protocols established and maintained by the ICE Internal Audit Function as needed.

The ICEU Audit Committee receives CVs and profiles of the Internal Audit Senior Director, IT Audit Senior Director (US based) and Chief Audit Executive ICE on an ad hoc basis whenever there is a change to the team as part of their team update.

The Model Risk Governance Framework is the part of the enterprise risk framework that establishes standards and principles for managing and mitigating the impact to ICEU's business caused by model error / failure or inappropriate model use. The MRGF is reviewed on an annual basis or in the event of a material change to the model risk governance and/or procedures required under the MRGF. The MRGF is ultimately approved by the Board, being also reviewed by the Model Oversight Committee. The MRGF set out the responsibilities and governance arrangements for risk management models within ICEU.

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| Model validation activities are undertaken in line with the Model Risk Governance Framework and are subject to review, challenge and approval by the Model Oversight Committee and the Board, or its delegated committee, in case of material models (see Principle 6, Key Consideration 7, for further details on model validations). | |
| **Key Consideration 7** | **The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.** |

Relevant interests are identified, and taken account of, through various mechanisms within the ICEU governance arrangements, including Board (and shareholder) meetings and resolutions, Board level committee meetings, management committee meetings and Product Risk Committee meetings.

In addition, Rule 109 of the ICEU Clearing Rules requires ICEU to hold public consultations on proposed rule changes, providing prospective and actual Clearing Members with an opportunity to review and suggest amendments to the ICEU Clearing Rules and Procedures.

ICEU is also required to notify the Bank of England, ESMA, the CFTC and the SEC of proposed rule changes. CFTC and SEC proposed rule changes are required to be published on the ICEU website. ICEU takes appropriate steps to ensure that the Bank of England and ESMA are given adequate advance notice of proposed Circulars related to rule changes prior to implementation.

As noted earlier in this document the CDS PRC and F&O PRC consist of external members who provide advice and insight and views. Each of these bodies have an important part to play in relation to the decisions taken by ICEU and are involved in the setting of new, and changing the key market, counterparty, liquidity and risk related policies. The Board and Board level committees, including the CRC (which also consists of client and Clearing Member representatives), will review once the PRCs have provided feedback. The PRCs receive, as appropriate, periodic reporting on risk related policy review results (including stress and back-testing), summary exception reports (e.g. limit breaches) or special reports as requested by the PRCs. Additionally, in the event of the default of a CDS Clearing Member, a CDS Default Management Committee is established from CDS Clearing Members in order to provide advice the Clearing House in managing and closing-out the defaulter's portfolio.

The PRCs are consulted on any major changes in relation to the design, rules and overall strategy of ICEU on an advisory basis in accordance with their Terms of Reference.

Conflicts of interest are dealt with under the relevant Terms of Reference, Non-Disclosure Agreements or agreements executed on appointment of a member, the Conflicts of Interest Policy and the Global Code of Business Conduct.

Information provided to the PRCs is also anonymised, where appropriate, to ensure confidentiality.

Decisions affecting Clearing Members are notified by Circular where appropriate and posted on the ICEU website. The decisions of the Board and its Committees are formally documented, reviewed and subsequently approved.

Formal notifications to regulators concerning material changes and Rule makings are made in line with their requirements. The CFTC ad SEC require that ICEU publish proposed rule changes on its website.

## 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.** | |
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| **Key Consideration 1** | **An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.** |

The types of risks inherent in ICEU's core business are categorised and defined in the risk register as follows:

- **Failure to maintain adequate resources and failure to safeguard resources.** ICEU's risk management policies and procedures fail to maintain sufficient resources to safeguard ICEU, the wider marketplace and our clearing member / clearing participant / contracting party's assets.
- **Failure to comply with regulatory requirements, implement effective contracts and legal agreements and maintain appropriate employment practices.** ICEU does not have a well-founded, clear, transparent and enforceable legal basis for material aspects of its activities, or does not comply with relevant laws or regulations, or maintain effective employment practices.
- **Failure to design, implement and monitor clearing operations and processes.** Clearing operations and functions are not designed or implemented to deliver services performed by ICEU.
- **Failure to secure CCP data, systems and premises.** Confidentiality, integrity and availability of ICEU's systems, resources, customer data, internal data, intellectual property, or other cyber assets may not be adequately protected.
- **Failure to design and operate clearing technology services reliably.** Clearing technologies fail to operate as expected and do not provide sufficient availability, performance, capacity, resiliency and/or security.
- **Failure to deliver competitive and cost-effective clearing services or meet stakeholder needs.** ICEU may fail to identify or respond to changing market demand for clearing services or opportunities arising from changing industry, market and/or regulatory factors. Clearing services are not competitive and capital efficient.

ICEU's overarching approach to risk management is administered according to its Enterprise Risk Management Framework. This provides a structured and disciplined approach towards identifying and managing risk inherent in ICEU's core business processes and decision-making activities. In particular, the Enterprise Risk Management Framework establishes the three lines of defense model, where the appropriate roles, responsibilities, and governance incentives are defined.

Moreover, through the framework, ICEU's risk appetite, risk taxonomy, and risk mitigation measures are assessed. The President assists the Board in establishing an appropriate risk appetite which is consistent with ICEU's short- and long-term strategy, business and capital plans, risk capacity as well as compensation programmes. The articulation of the risk appetite into the business areas is achieved through the development of risk appetite metrics and policy statements. The resulting key policies, procedures and controls listed below support the risk management framework and address how ICEU manages certain risks to which it is inherently exposed.

The Compliance department also maintains a CMTP, which entails the review of the different areas of activity where ICEU is subject to regulatory obligations, to assist ICEU in identifying the risks of non-compliance with the regulations applicable to ICEU's provision of clearing services, and its processes and systems.

Please see below for a list of the key policies and procedures that help identify, measure, monitor and manage the risks faced by ICEU.

**ICEU's Clearing Rules and Procedures** - Clearing Members have rights and obligations set out in the ICEU Clearing Rules and Procedures (also referred as the "Rules") and a Clearing Membership Agreement and, where applicable, an additional addendum to the Clearing Membership Agreement. Every Clearing Member agrees to be contractually bound by the ICEU Clearing Rules as a result of becoming a Clearing Member. ICEU publishes its Rules on its website making them publicly available. Rule 502 enables ICEU to call and collect Margin from its Clearing Members and to set the eligibility and form of permitted cover (also known as 'collateral'). Under Part 2, Rule 201(a) (xx) and Part 11, Rule 1101, Clearing Members are liable to make and maintain Guaranty Fund Contributions in one or more of the separate Guaranty Funds operated by ICEU.

In addition to its Rules, ICEU relies on its legal rights under Applicable Laws in handling Events of Default, including under EMIR, FSMA, the Companies Act 1989, the Settlement Finality Directive, the Settlement Finality Regulations, the Financial Collateral Directive, the Financial Collateral Regulations and the U.S. Bankruptcy Code, as applicable.

ICEU employs a number of dedicated (i.e. IT developed) and non-dedicated (e.g. process-driven) systems to help identify, measure, monitor and manage the range of risks that arise from its clearing activity. Different types of risk require distinct systems in order to deliver efficiently the expected outcome. A non-exhaustive list includes the following:

- **Overarching**
  - **Qualitative Assessment** - At least annually ICEU performs a review and refresh of its risk management cycle, which includes risk identification and assessment in order to determine whether risk responses remain fit-for-purpose. Information used in the identification process include historical information, such as incidents, trends, etc. and includes forward looking assumptions in relation to expected or anticipated internal or external changes.
  - **Risk Register** - Identification of each risk borne by ICEU, the owners of each risk and the evaluation of the residual risks after considering any mitigating actions. It also supports the implementation of the ORSA, as presented below.
  - **Emerging Risk Register** - Identification of forthcoming risk events, including geopolitical developments and climate related risks, in order to assess how they could manifest and affect either ICEU or its stakeholders.
- **Business Risk**
  - **Business Impact Analysis -** In the event of a new or a change to an existing product or service, a business impact assessment to determine any impact on ICEU's risk profile and an appropriate response is performed.
- **Legal & Regulatory Risk**
  - **Compliance Monitoring and Testing Programme (CMTP)** - Review of ICEU practices versus the regulatory requirements to which ICEU is subject.
  - **PFMI Self-Assessment** - Evaluation of ICEU practices against the industry standards presented in the Principles for Financial Market Infrastructures.
- **Financial Risk**
  - **Margin -** Intraday and end-of-day risk systems that assess current (realized) and potential future credit exposures arising from cleared contracts.
  - **Stress Testing** - Evaluation of potential future credit exposures and liquidity needs under extreme but plausible conditions.
  - **Collateral -** Systems designed to assess haircut levels and concentration of collateral.
  - **Counterparty** - Credit risk rating of Clearing Members and collateral issuers.
- **Operational Risk**
  - **Model Performance -** Execution of back-testing and sensitivity analysis.
  - **ORSA -** Operational Risk Self-Assessment conducted by each of ICEU's business areas.

    - **Incident Management -** System used to ensure that any disruption to ICEU's operations is reported and corrected, including near misses, and root causes are identified and addressed.
- **Information Security (including Cyber Risk)**
    - **Cyber Risk** - Risk assessment of cyber security including, for instance, penetration exercises.
    - **Phishing Exercises** - Testing of ICEU staff awareness for information security.

In general, risk metrics are calculated at the most granular level possible, such that consolidation into aggregated figures is always enabled. For instance, financial risk measurements are derived at the instrument level. Related risks can be netted or aggregated where appropriate in accordance with strict rules, guidelines and methodologies whether at a position level, Margining level, account level, legal entity level or at a clearing service level. In particular, for the Counterparty Rating System ("CRS"), the credit risk is assessed and monitored at the entity level, but aggregation of exposures within and across entities for a given group structure is also possible. Further, similar aggregation approach is also feasible for concentration of credit risk. In case of a default, ICEU can generate management information across the different service segments (F&O and CDS) to create an overall overview of the defaulted entity or entities.

Different governance processes apply depending on the stage (i.e. development, approval, and maintenance) and item (i.e. policies, procedures, frameworks and systems) being considered. Importantly, however, is that all these are subject to strict review and approval prior to implementation, in accordance with the documentation governance schedule and established in the appropriate terms of references of ICEU committees.

The effectiveness of ICEU's risk management policies, procedures and systems is assured through different mechanisms. For example, systems supporting risk models are assessed as a part of the independent validation exercises. On a periodic basis, model performance is reviewed in order to assess whether models continue to be fit-for-purpose. Back-testing and stress testing are performed daily. In the case of policies (and related documentation such as frameworks, procedures, guidelines, etc.), oversight is typically performed by ICEU's senior management, including the audit team and appropriate executive committee. Periodic review cycles are also established aiming at assessing whether ICEU practices continue to be reflected in its policies and related documentation. More broadly, trends, variances and anomalies are captured as part of routine risk reporting. Risk, incurred by ICEU as part of its clearing activity, is continuously assessed against predetermined and defined indicators, performance levels, tolerances, limits and appetite thresholds which collectively determine the risk profile. Collectively, these measures test the effectiveness of ICEU's risk management policies, procedures and systems in terms of their ability to mitigate risk or their ability to escalate matters of concern. Additionally, effectiveness is further assured through the ORSA control framework which includes sample testing of controls, and incident remediation which cross-references if any gaps exist in procedures and/or manuals which also need updating.

ICEU's core risk management policies, procedures and control systems that form part of ICEU's risk management framework are reviewed at least annually. There are several components of the risk assessment and testing program that are undertaken more frequently, for example quarterly. In addition, risk management practices and methodologies are tested for effectiveness on a regular basis as part of the routine daily and monthly risk reporting processes. Updates to these typically happen either as a result of the reviews or on an ad hoc basis initiated by owners. Ad hoc changes are typically prompted by new initiatives and business activities, regulatory changes, changes in market practices or changes in the risk environment and there are several processes to ensure that reviews of the policies, procedures and control systems are triggered. New initiatives need to be approved through internal governance committees and risk assessments submitted as part of that process to determine any required changes. Regulatory changes are also reviewed through business review and periodic testing through the CMTP. Changes in the risk environment are monitored on a continuous basis and through our routine daily and monthly reporting and any changes required are assessed in order to determine their significance in relation to the risk profile and risk appetite.

| Key Consideration 2 | An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI. |
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In addition to the information provided in the CPMI-IOSCO Quantitative Disclosure, ICEU provides the following information to Clearing Members and, where relevant, to their customers to enable them to manage and contain the risks they pose to ICEU:

- Possible issues identified in membership applications and from ongoing membership oversight and due diligence;
- ICE Risk Model ("IRM 1.0") parameters and access to the methodology used via IRM portal;
- CDS Margin calculator and information on the risk methodology provided to Clearing Members and clients;
- Daily reporting of Margin requirements and positions (key management reports);
- Results of stress testing and back-testing;
- Real time access to view and adjust positions via proprietary ICE systems and GUIs as appropriate;
- Model parameter changes and configurations; and
- Clearing Member rankings highlighting relative size of positions held by that Clearing Member and volumes cleared.

In terms of daily reporting, ICEU provides Clearing Members with appropriate information including, but not limited to:

- Margin requirements;
- Cash/collateral movements and balances;
- Open position reporting;
- Deliveries reports; and
- Product data.

The incentives provided by ICEU to Clearing Members and their customers to monitor and manage the risks they pose to ICEU include:

- Initial Margin - requirement for Clearing Members to provide Margin to ICEU daily, before 09:00 GMT. In addition, where necessary, Clearing Members are required to provide funds intra-day. Failure to meet deadlines could impact the Clearing Member's counterparty rating and could lead the Clearing Member being asked for additional Margin and ultimately potentially being declared in Default;
- Margin Add-ons - Clearing Members are required to pay additional charges in circumstances where additional risk is posed to ICEU. This includes for example: large position or concentration charges and wrong way risk charges;
- Price Discovery Mechanisms - Clearing Members submitting settlement prices for ICEU contracts may be required to clear on offered quotes;
- Guaranty Funds - Clearing Members are required to contribute to the ICEU Guaranty Funds (CDS/F&O) which provide a means of mutualising losses arising from the default of a particular Clearing Member across ICEU and the Clearing Members;
- Stress Margin for Clearing Members - for example an additional charge will be incurred by an F&O Clearing Member when under stress testing the default of that Member would cause a breach of regulatory rules, governing the adequacy of the relevant section of the Guaranty Fund and other ICEU resources;
- Permitted Cover, haircuts and concentration limits - to mitigate price risk from liquidating collateral of defaulters, Clearing Members are required to provide additional Margin and to ensure that collateral posted meets minimum requirements (List of Permitted Cover and limits on collateral);
- Delivery Procedures - used to manage delivery obligations. The procedures enable ICEU to bring disciplinary proceedings or levy a fine against a Clearing Member, including (without limitation) in respect of late or failed delivery;
- Membership criteria - acceptance criteria for membership are designed to ensure that the Clearing Member has adequate controls in place;

- Clearing Member Rules and Procedures that require Clearing Members to actively manage their positions and the ability of ICEU, should a Clearing Member fail to continue to meet membership criteria, to remove that Clearing Members' membership of ICEU; and
- The Counterparty Credit Risk Policy enables ICEU to impose higher Margin and default fund requirements on those Clearing Members who ICEU consider pose increased risk to ICEU.

The Product Risk Committees (F&O and CDS) include representation from suitably qualified Clearing Members who advise the Board on risk management arrangements and the adequacy of the relevant Guaranty Fund and other incentives.

The Client Risk Committee ("CRC") includes representation from both Clearing Members and their customers in order to advise the Board more broadly on any arrangements that materially impact the risk management of ICEU.

ICEU's policies (and related documentation such as frameworks, procedures, guidelines, etc.) are designed to enable the prompt identification, measurement, monitoring and management of risks. For instance, reporting lines are specified such that emerging risks can be rapidly escalated to ICEU Senior Management and Board-level committees. ICEU's systems are designed to provide, where possible, real-time access by participants to the relevant information to enable participants to manage and contain their risks. The following tools are available to Clearing Members to facilitate management of their exposure to ICEU:

- ICE Risk Model (IRM 1.0): for F&O Clearing, ICEU determines potential future exposure (ICEU's Initial Margin) using the ICE Risk Model. It is publicly available to customers and documented on ICE's website. See Principle 6 for detail of the model;
- Post-Trade Management System ("PTMS"): Trade registration and clearing system used by F&O Clearing Members and the Operations department for registering and allocating trades among Clearing Members;
- Allocation and Claim Transaction System ("ACT"): ACT is an extension of PTMS, and is designed to provide F&O Clearing Members with access to claim and allocate give ups;
- Extensible Clearing System ("ECS"): Treasury and banking system which handles collateral (cash/non-cash), positions and custody management; and
- ICE Link: Post-trade connectivity and middleware platform for the CDS market which provides market participants with electronic workflow and connectivity to real-time clearing.

The ICEU Clearing Rules and the Clearing Membership Agreement give ICEU the powers to discipline and/or take corrective action against Clearing Members who fail to comply with those aspects that relate to amongst others the minimum capital adequacy and risk management requirements.

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| **Key consideration 3** | **An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.** |

ICEU performs initial and ongoing due diligence on all entities where it has a direct relationship and/or a direct dependency with regard to meeting its clearing obligations and service provisions.

ICEU performs regular and routine assessments, including credit watch reports and meetings, due diligence reviews, and vendor and service monitoring.

Due diligence processes include quantitative and qualitative credit, operational and/or liquidity assessments of the entity's structure and risk profile. The assessments are performed on a risk-based approach and in accordance with ICEU Clearing Rules, applicable laws, and relevant regulations. Types of entities include Clearing Members, central securities depositories, payment systems, exchanges, rating agencies, intermediaries, outsourced partners, vendors, liquidity providers, settlement agents, etc.

Additional measures and requirements are placed on entities that have fallen below expected standards to ensure that ICEU's continuity of clearing service is not disrupted and where relevant safety of assets is assured. Additional measures and requirements are applied in a timely and sensitive manner and aim to be anti-procyclical.

Further details on these due diligence processes, and identification mechanisms, per type of risk are presented in each respective CPMI-IOSCO principle. For example, ICEU's management of counterparty and credit risk and associated model risks are addressed in detail under Principle 4 (Credit) and Principle 6 (Margin). Principle 7 (Liquidity) covers the interdependencies related to liquidity risks. Principle 17 details how ICEU manages its operational risks including, risks posed by its suppliers, technology infrastructure and systems and key staff. ICEU does not currently provide interoperability with CCPs either within ICE group or with third parties - please see Principle 20 for more information.

Finally, the risks posed by ICEU to other entities are also considered in the Recovery Plan, under the following assessment scenarios:

- Clearing Member Default - impact of different Clearing Member default scenarios on other entities (and Clearing Members). This includes consideration of liquidity and contagion risks;
- Suspension or failure of critical ICEU functions and the impact on other entities;
- Business and commercial threats facing ICEU and the impact on other entities;
- Investment losses and the impact on other entities; and
- The scenarios also consider the impact on liquidity and contagion risks.

Measurement and monitoring of risks arising from interdependencies vary according to the type of risk, although intersection exists, and mechanisms may serve multiple purposes. For example, the following illustrate some mechanisms for key material risks.

Counterparty credit risk forms part of the risk management framework, and the Clearing Risk department conducts daily financial monitoring over its counterparties. It assesses intraday and overnight exposures via Margin systems and stress testing exercises. Concentration risk is measured both as part of margining (concentration charges are applied) and counterparty credit risk management (reduced and avoided). Measures are embedded within the risk management framework to avoid wrong-way risk where possible (e.g. collateral management and investment management) and factored within margining requirements, where necessary, to minimise exposure to wrong way risk. ICEU's procyclicality framework helps ensure that where ICEU processes and systems are procyclical, and that there are appropriate measures in place to reduce the effect of these.

In regards to liquidity risk more broadly, ICEU uses a private settlement bank model and Approved Payment System ("APS") to transfer funds in the relevant currencies to and from Clearing Members. The Treasury department is charged with managing its credit and liquidity risks arising from the settlement banks - see Principles 7 and 9 for more information. Moreover, the intra-day credit risk that arises through ICEU paying and receiving cash settlements via APS Banks and its Clearing Members is reduced by the use of concentration banks (i.e. liability commences and ceases at the point funds are received or debited at ICEU's concentration bank rather than at the Clearing Members' APS Banks). The assessments are supplemented by the execution of daily liquidity stress tests. Please also refer to Key Consideration 1 for more information regarding how ICEU manages risks it bears from, and poses to, settlement banks, custodians, and service providers.

For operational risks, Clearing Members are required to have in place robust operational arrangements and, together with outsourced service providers, are required to have business continuity arrangements in place that are subject to regular review and annual business continuity testing to meet ICEU's minimum requirements. Test results are evaluated by senior management and the Board, and the business continuity planning process remains viable through assessment of the testing program and test results by an independent party - please refer to Principle 17 Key consideration 6 for more information.

When default management procedures are considered, ICEU's periodic default management tests are designed to ensure that there are correct processes, procedures and measure in place to adequately operate and continue services during a Clearing Member default - Please refer to Principle 13 Key consideration 4 for more information.

ICEU employs the following non-exhaustive list of tools to address the material risks arising from interdependencies with other entities:

- Due diligence on providers - e.g. receive Third Party Assurance Reports on financial institutions' ability to perform service;
- Approved Financial Institution Policy, which entails minimum eligibility criteria for ICEU counterparties and liquidity providers;
- Legal arrangements - required to include agreed terms on their resilience and ability to operate;
- Rights to access information on providers - contractual requirement of service provision;
- Pre-acceptance credit checks performed by Treasury and the Credit Risk team; and
- ICEU devotes appropriate resources and efforts to the daily monitoring of its outsourced services and ensures that service providers meet its high standards, thus increasing the level of certainty that the outsourced service arrangements deliver efficiency and resilience that benefits ICEU and its stakeholders.

ICEU's Recovery Plan also provides an analysis of ICEU's key interdependencies including inter-group service arrangements (e.g. ICE, and ICE Futures Europe), reliance on third party service providers, technology systems and key staff, together with an inventory of recovery tools and options (including policies and frameworks mentioned above) that will be employed in the event of operational disruptions.

The assessment and review of the risk management framework, and its tools in particular, are performed via the established operational and governance structures.

ICEU has a 3 lines of defense model, which provides structure around risk and control management. In such a model, in addition to checks implemented by the First Line, the Second Line is responsible for overseeing how the various risk types are managed and mitigated within ICEU and if these levels are sufficiently effective. The main components of this Second Line oversight and measurement of effectiveness include, but are not limited to:

- Model Validation and checks on implementation when it comes to the ICEU risk models;
- Policy reviews and the testing Operational Controls to assess if these are still effective and fit for purpose; and
- Post-mortem on incidents to assess if controls have failed.

The third line of defense (Internal Audit) provides independent assurance of the working of the First and Second Line. Internal Audit provides independent objective assurance on the effectiveness of ICEU's risk governance and risk management strategies and tools in the context of the current and expected business environment. In addition Internal Audit also carries out special investigations and undertakes work required by regulators, or to validate remediation of regulatory reported matters.

The various ICEU Risk Committees and Board appointed risk advisory committees are charged with undertaking reviews of the continued adequacy of policies and controls designed to manage risks. Policies and procedures are reviewed by the relevant committees in line with the Documentation Governance Schedule and with a frequency as prescribed by the applicable regulatory requirements. Models are reviewed by the Model Risk Oversight Committee at least on an annual basis in line with the MRGF.

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| **Key Consideration 4** | **An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an** |

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| | **FMI should also provide relevant authorities with the information needed for purposes of resolution planning.** |

ICEU has several methods for identifying scenarios that may potentially prevent it from providing its critical operations and services:

- Through the development and regular review of ICEU's Recovery Plan;
- Through ICEU's monitoring of emerging risks and its risk register;
- Through ICEU's annual capital assessment process; and
- Through ongoing work to establish a more specific and clearly articulated risk appetite for capital.

The identified scenarios are documented in ICEU's Recovery Plan and include:

- Default Losses
    - Default of one or two Clearing Members causing losses larger than ICEU's prefunded resources;
    - Default of more than two Clearing Members causing losses larger than ICEU's prefunded resources; and
    - Liquidity shortfalls occurring with a Clearing Member default.
- Non-default losses
    - Investment losses;
    - Sever liquidity issues - e.g. failure of a settlement bank or custodian;
    - Contracts can no longer perform, or are illegal or impossible to perform;
    - Fraud;
    - Cybersecurity breach;
    - Legal judgements / liabilities; and
    - Losses from interconnections or interdependencies between ICEU and its affiliates and service providers.

The scenarios listed above explicitly include both independent and related risks - e.g. liquidity shortfalls occurring with a Clearing Member default and separate to a Clearing Member default.

ICEU's recovery tools are generally structures so that they can be applied whether they arise as an independent risk or a related risk - e.g. recovery tools for dealing with the impact of a cybersecurity breach can be applied whether this occurs independently or in conjunction with other risks.

ICEU has a Recovery Plan and a Wind Down Plan, governed and reviewed as described in section 3.4.5.

ICEU's Recovery Plan sets out the relevant information, the steps to take and the options available to restore ICEU to normal operation in the event of severe financial stress and losses.

The Recovery Plan builds on ICEU's existing risk management tools, policies and procedures. It clearly defines ICEU's recovery trigger points and describes the recovery mechanisms, tools and options that ICEU can use in order to recover its critical services.

ICEU also has a separate Wind Down Framework and Plan if ICEU's recovery tools are unable to recover its critical services, or if ICEU decides to cease providing one of its critical services.

The Wind Down Plan provides a road map to wind down some or all of ICEU's business in an orderly and timely manner with minimum contagion risk, including the continued provision of critical services. The Wind Down Plan sets out the governance arrangements and provides the basis for estimating the costs associated with an orderly wind down over a six-month period. Please refer to Principle 15.3 for more information.

ICEU’s Recovery Plan allows ICEU to continue to provide critical operations and services by providing the recovery tools necessary to fully cover all Default Losses, all liquidity shortfalls and all investment losses.

This allows ICEU to continue the provision of its critical operations and services even after suffering a severe financial loss (beyond its pre-funded resources) or a severe liquidity shortfall (beyond its liquid financial resources).

ICEU’s Recovery Plan and Wind Down Framework and Plan are reviewed as part of ICEU’s Documentation Governance Schedule which sets out the frequency of reviews and the governance process for changes to the documents.

ICEU’s Recovery Plan and Wind Down Framework and Plan are reviewed annually and updated as needed per the Documentation Governance Schedule. These documents can also be updated ad-hoc, if required, based on changes to ICEU’s operating model.

## 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.**

| Key consideration 1 | An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both. |
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ICEU's risk management is structured specifically to ensure robust clearing arrangements in order to minimise risks for the Clearing House and its Clearing Members. ICEU has developed a comprehensive tiered waterfall approach to systemic risk management.

These tiers are:

1) Membership criteria;
2) Original Margin (also known as Initial Margin) and Additional Margin;
3) Variation Margin;
4) Intra-day monitoring and Intraday Margin Call;
5) ICE's Initial Contribution;
6) Default insurance;
7) Guaranty Fund; and
8) Powers of assessment.

Key to the success and effectiveness of this approach is the determination of Initial Margin, Additional Margin, Variation Margin and intra-day Margin calls that address current and potential exposures, as well as Guaranty Fund contributions from each Clearing Member.

Note that:

1) ICEU also accounts for position concentration risk through the calling of Additional Margin;
2) ICEU assesses Clearing Members using an internal counterparty rating system ("CRS"), and closely monitors Clearing Members beyond specific CRS limits, based on market information and financial information provided by Clearing Member;

3) ICEU narrowly defines eligible collateral posted by Clearing Members to cover their requirement; and monitors limits on issuers of collateral as a new feature in the Counterparty Credit Risk Procedures; in addition to the existing monitoring under other policies.

4) ICEU has a conservative liquidity risk management framework and plan and operates an Assured Payment System (“APS”) bank network to ensure timely payments.

The day-to-day management of ICEU’s credit risk posed by Clearing Members and the monitoring of current and potentials futures exposures against limits is the responsibility of the Clearing Risk Department (“CRD”). The intraday position limits and capital to Margin limits are reviewed and approved by the relevant Risk Committee(s).

In addition, CRD ensures that unsecured credit limits to individual counterparties or groups of counterparties that are also Clearing Members are not exceeded. CRD reports and measures these exposures daily.

The Treasury department monitors the activities of ICEU's investment agents and custodians and monitors exposures against internally agreed limits.

Operationally, the waterfall structure is reviewed on a periodic basis via a number of different assessments performed by ICEU.

For instance, the size of the pre-funded resources to manage credit exposures is reviewed daily, with changes to Margin and Guaranty Fund requirements implemented if required. Default procedures are reviewed at least quarterly and simulation exercises (“Default Tests”) at least annually allowing the CCP to assess the entirety of the waterfall.

Similarly, a core principle of ICEU's model risk governance, in relation to credit risk is that all significant risk model changes must be reviewed at least annually by the independent Risk Oversight team (as defined by Model Risk Governance Framework) or an equivalent third-party review team who must be independent of the persons/team that carried out the model development.

Organisationally, ICEU management has established a formal policy review and approval programme to ensure policies and frameworks are kept up-to-date and reflective of current practices. As part of this programme, policy documentation is reviewed by relevant governance forums (see Principle 3 for more details) where the frequency of review (e.g. annually, biannually, periodically, semi-annually) differs based on the criticality and importance of the relevant documentation.

For instance, the liquidity risk management framework is designed to ensure with a high level of confidence that ICEU can effect payment and settlement obligations in all relevant currencies as they fall due, including, where appropriate, intraday. It also includes the assessment of ICEU’s potential future liquidity needs under a wide range of stress scenarios. The stress scenarios include the default of Clearing Members from the date of a default, until the end of the liquidation period in extreme but plausible market conditions. The liquidity risk management framework is maintained by ICEU’s Treasury department and is formally reviewed and updated at least annually.

The above structure enables ICEU to define a rigorous governance process with regard to changes in its practices to reflect alterations in the environment, markets and new products.

| **Key Consideration 2** | **An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.** |
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ICEU defines credit risk in the Counterparty Credit Risk Procedures as risk of a third-party failing to meet its contractual obligations resulting in adverse financial impact. ICEU identifies and assess credit risk through a combination of assessments related to methodologies, policies, and practices.

The Board-appointed Risk Committees to discuss and review ICEU’s adopted risk methodologies and risk models which are designed to identify and mitigate credit risk. Additional Board oversight and challenge is provided by the Board Risk Committee (“BRC”) with regard to significant changes to those models and methodologies.

The relevant Risk Committee(s) considers regular reporting from the Executive Risk Committee (“ERC”) and has an opportunity to probe the ERC and the President of ICEU regarding any aspect of risk that it may consider important.

The following approaches are used to monitor and measure credit risk and credit exposures:

1) Intraday risk management (on a near real time basis): Intraday monitoring of current and potential exposures of (i) intraday market price movements of counterparties cleared positions (Variation Margin) and collateral (collateral value change) and (ii) intraday positions (Initial Margin).

2) End-of-day risk management: Assessment of current exposure (Variation Margin) to be exchanged next day, and calculation of potential future exposures based on normal and extreme market conditions to be collateralised in the form of pre-funded resources (e.g. Initial Margin, Add-ons, Stress Margin, etc.).

3) Counterparty Credit Risk Management (daily): The CRD, with other relevant ICEU business units, monitors breaches and exceptions in Clearing Member performance measures such as:

   i. Number of special Margin calls (at the discretion of ICEU);

   ii. Counterparty credit scoring;

   iii. Capital to Margin limits and shortfall Margin calls;

   iv. Uncollateralised stress losses and stress Margin;

   v. Collateral limits;

   vi. Initial Margin levels;

   vii. Missed/late Margin payments/09.00 cash calls and;

   viii. Other Margin buffers called by ICEU such as wrong way risk add-on or concentration charge add-on.

   ix. Unsecured credit exposures such as time deposits and APS exposures.

4) Other counterparty risk i.e. non-member risk (daily): The Credit Risk department, in conjunction with the Treasury department, monitors financial service providers with specific focus on issuers of eligible collateral, eligibility criteria of investment counterparties, eligibility criteria of APS Banks, investment agents, custodians and concentration bank counterparties. Also, the CRD sets and monitors limits for overnight deposits and other unsecured cash exposure by counterparty. The limits are set at counterparty level and are reduced by uncollateralised stress losses if the financial service provider is also a Clearing Member.

5) Credit reporting (daily): The CRD reports cover Clearing Member share price, CDS Spread, reported capital, relevant news and other pertinent indicators such as sovereign ratings. This information is used to monitor on-going financial strength, to compare the current vs. the previous credit score and identify any significant changes. The capital to Margin is also reported daily and the CRD recommends actions in response to a deteriorating capital position and / or a relative increase in Margin and reports them to the executive.

6) Watchlist (monthly): The Watchlist highlights participants with a deteriorating credit score or with a special risk situation. Entries to the watch list are considered based on daily risk reports (including stress tests), the quarterly credit report, feedback from supporting departments (Operations, Compliance and Treasury), and the CRS. The CRD monitors Clearing Members in Watchlist daily and updates the Senior Management team every month.

7) Counterparty financial review (daily and quarterly): CRD updates the Clearing Members' credit scores daily to reflect the impact of market indicators (shares, CDS prices), the size of the Margins on the counterparty risk and the capital requirements in relation to the Margins. In addition, the CRD updates financial information aligned with the Members' reporting cycle of financials and produces a quarterly counterparty risk report. CRD also produces ad-hoc reports on new Watch List members and in any case, produces an in-depth economic cycle analysis to cover all members every four-years. This provides a baseline measurement of both Clearing Members reported financial position and a measure of performance relative to their previous review. Enhancements to the credit scoring methodology and automation of the watch list scores have been approved by the Bank of England and are in the approval process with US regulators.

8) Counterparty risk monitoring (Monthly): CRD reviews the Watchlist members, score migrations, buffer Margin, financial service providers and Clearing Members secured and unsecured exposures, and a portfolio comparison of the F&O and CDS Clearing Member's credit scores.

9) Counterparty review: The Clearing Members' quarterly financials are reviewed quarterly. Clearing Members' membership requirements are reviewed every 4 years, following a submission of audited financial statements.

ICEU has a range of actions which can be used to manage counterparty credit risk based on risk bands of Clearing Members.

1) Current exposure is calculated using end-of-day and intraday mark-to-market prices enabling monitoring and calling realised and unrealised Variation Margin throughout the day from ICEU's intraday Margin system. End-of-Day Variation Margin is settled daily from ECS;

2) Clearing Member end-of-day Initial Margin is calculated and called daily. Clearing Member intraday Initial Margins are recalculated and changes in Margin requirement intraday added to changes in mark-to-market (i.e. change in Variation Margin) to reflect an overall change in intraday liability of the Clearing Member through ICEU's intraday Margin system. Thresholds are in place with regards to the risk tolerance permitted by ICEU;

3) Controls are in place with regards to concentration charge, wrong-way risk charge, delivery charges, liquidity (bid-offer) charges, collateral haircuts, jump-to-default charge that impact the credit risk undertaken by ICEU. Calls for these Additional Margins are scheduled as part of the end of day process within ECS. ICEU can issue intraday Margin calls covering these additional potential future exposures through ICEU's intraday Margin system at its discretion;

4) For equity settlements, that result from option exercise/expiries, ICEU only applies DvP;

5) Position transfers are always pre-checked by CRD to assess any pre-funding requirements prior to the position transfer, which are processed through ICEU's intraday Margin system;

6) ICEU's core banking system (ECS) prevents Clearing Members withdrawing collateral which would leave them uncovered against their Margin requirements, effectively not allowing any net debits.

7) Clearing Member's credit risk assessment is carried out by the CRD in-depth for each Applicant prior to becoming a Clearing Member, followed by an in-depth annual review. ICEU's monitoring mechanisms include (but are not limited to):

   i. Periodic review of fundamental credit indicators coupled with the output of the counterparty rating system provides an ongoing view of a Clearing Member's creditworthiness;

   ii. Periodic review of Clearing Member's Risk Management and Systems, conducted via on-site visits, completion of a risk questionnaire and documentation requests.

   iii. Short term credit assessment takes place reviewing data within the daily credit reports, that cover short-term indicators such as share price and CDS credit spread;

   iv. Review of monthly/quarterly financial submissions from Clearing Members;

   v. Quarterly review of the CRS which is presented and discussed at the F&O and CDS Product Risk Committees.

ICEU measures the effectiveness of these tools via tailored assessments. For instance, for the end-of-day Initial Margin extensive backtesting is performed daily. Similarly, collateral haircuts are reviewed on a monthly basis and monitored on a daily and intra-day basis to ensure their sufficiency. Distinct measures are used for the other tools listed above.

Collateral is valued daily as of End of Day and Clearing Members are not allowed to withdraw collateral which would leave them with uncovered credit exposures. The intraday Margin system calls for additional Margins if the level of exposure is greater than the collateral value.

Intraday, at least hourly, CRD monitors the collateral's price movements. If the price drops by an amount larger than the haircut, then the CRD receives an alert to consider internal escalation and to possibly adjust the haircuts.

Only high-grade sovereign bonds, gold or cash are accepted as collateral and the haircut methodology is independently validated annually.

| Key Consideration 3 | **A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS (Deferred Net Settlement) payment system or DNS SSS (Securities Settlement System) in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.** |
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N/A for ICEU.

| Key Consideration 4 | **A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using Margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on Margin). 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 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 for 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 for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.** |
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ICEU covers its current and potential future exposures to each Clearing Member through the following arrangements. Please also refer to the default waterfall approach, summarized in 4.1.1 and described in more detail in Principle 13.

1) The Clearing Rules require Clearing Members to meet unrealised or realised Variation Margin calls, on and end-of-day and intra-day basis, in order to cover current exposures.
2) ICEU's Clearing Rules require that Clearing Members post Initial Margin and Additional Margins requirements in order to cover potential future exposures (see Principle 6 for further details). Initial Margin is set as a minimum to a 99% degree of confidence (99.5% for CDS), and any additional (i.e. buffer or shortfall) Margin required increases this degree of confidence. Margins are posted on an end-of-day and intraday basis.
3) ICEU narrowly defines eligible collateral (see Principle 5 for further details). Haircuts applied to eligible collateral covers potential future exposures of collateral.
4) The Clearing Rules require that each Clearing Member contributes to the applicable Guaranty Funds.
5) The Guaranty Funds are calibrated to cover the stress losses in excess of Initial Margin (Initial Margin, with only limited add-ons considered) held of the two largest Clearing Member groups under extreme but plausible stress scenarios.
6) ICEU itself makes a pre-defined contribution to each fund it operates. ICEU's F&O contribution is a total of $197million and its CDS contribution is a total of $50million.
7) Default Insurance in an amount of $100million that involves application of ICEU's contributions and the coverage includes both the F&O and CDS contract categories.
8) ICEU has the power under its Clearing Rules to impose Powers of Assessment on Clearing Members if prefunded resources are not sufficient to cover the Clearing Member losses (i.e. Initial Margin and add-ons of the defaulting

Clearing Member, the prefunded contributions of relevant Clearing Members, the prefunded Guaranty Fund and ICEU's own contributions).

**For CDS:** The Initial Margin is set as a minimum to a 99.5% confidence interval. Any additional Margin required increases this degree of confidence.

The ICEU CDS Guaranty Fund is designed to provide adequate funds to cover losses associated with the default of the two Clearing Member groups with the greatest potential losses. The CDS Guaranty Fund Calculation Methodology computes the magnitude of potential losses based on a comprehensive set of stress test scenarios, relying on a combination of quantitative and qualitative inputs. The stress test scenarios are designed to account for:

(i) the occurrence of credit events for three reference entities on which the defaulted Clearing Members sold/bought protection (uncollateralised loss-given-default);
(ii) adverse contracting or widening credit spread scenarios (uncollateralised spread response losses);
(iii) adverse widening of Index-Single Name 'basis' (uncollateralised basis risk losses); and
(iv) adverse changes of the default-free discount terms structure (uncollateralised interest rate losses). The considered risk quantile is increased to q*= 99.75%, and the selected 5-day risk horizon is consistent with the Initial Margin risk horizon. ICEU may increase the Guaranty Fund risk quantile or risk horizon, if needed.

On an intraday and end-of-day basis the Initial Margin (resources) sufficiency is evaluated. Any breach is reviewed by the CRD. End-of-Day Variation Margin and Initial Margin must be settled by 9AM GMT and any delayed payments are immediately reported internally and externally. Members' pre-funded resources (i.e. Initial Margin and Guaranty Fund) are also reviewed daily via stress testing exercises.

**For Future and Options (F&O):** The Initial Margin methodology is targeting a 99% degree of confidence. Additional Margin covers other potential futures exposures in relation to wrong-way risk or concentration and therefore increase the degree of confidence.

The ICEU F&O Guaranty Fund is established based on extreme but plausible stress scenarios and tested against a 99.9% confidence interval, when appropriate.

On an intraday and end-of-day basis the Initial Margin (resources) sufficiency is evaluated. Any breach is reviewed by CRD. End-of-day Variation Margin and Initial Margin must be settled by 9AM GMT and any delayed payments are immediately reported internally. Members' pre-funded resources (i.e. Initial Margin and Guaranty Fund) are also reviewed daily via stress testing exercises.

**For CDS:** The clearing of CDS transactions has a complex risk profile across multiple jurisdictions and the Risk Policy anticipates Jump-to-default ("JTD") requirements. JTD requirements include losses from credit events and considering portfolios that present specific or general WWR.

**For F&O:** ICEU provides clearing services in respect of financial instruments across multiple jurisdictions, which are highly correlated with the potential participant defaults. On this basis, wrong-way risk and concentration risk are considered by ICEU, and ICEU calls for additional Margin as appropriate. This is further detailed in Principle 6.

The ICEU Guaranty Funds are fully funded by Clearing Members and ICEU in accordance with sizing calculation and allocation methodology. The Guaranty Fund is sized based on the largest two Clearing Member groups defaulting at the same time, i.e. Cover2 Losses. In other words, the uncollateralised stress losses are aggregated across all Clearing Members under a common ownership (e.g. affiliates) in order to size the Guaranty Fund. In additional to the Guaranty Fund, ICEU also calls from its members Stress Margin (Formerly Stress Loss Charge) to mitigate any risk under extreme but plausible conditions that goes beyond the Guaranty Fund. A Default Insurance has also been established, as presented in 4.4.1.

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| As detailed in 4.4, ICEU maintains financial resources equivalent to largest uncollateralised stress losses of any two Clearing Member groups in extreme but plausible market conditions, i.e. Cover2 Losses. The uncollateralised stress losses are aggregated up to a Clearing Member group level, under common ownership.<br><br>Stress tests are performed, reviewed and reported to ICEU management on a daily basis by the CRD. Any Cover2 Losses beyond the Guaranty fund are collateralised via additional Margin call: Stress Margin (Formerly Stress Loss Charge).<br><br>The CRD also provides an analysis and recommendation regarding the sizing of the Guaranty Fund. For F&O, on a regular basis the daily stress test results are reviewed by the respective F&O Product Risk Committee in order to assess the adequacy of the Fund. The Committee then decides on any adjustments to the Guaranty Fund size. For CDS, the review of the Guaranty Fund is performed weekly.<br><br>ICEU complies with EMIR requirements including in respect of its own contributions to the Guaranty Funds and its regulatory capital.<br><br>The authority to hold financial resources and the basis on which they are to be calculated is held in the ICEU Clearing Rules and Clearing Membership Agreement.<br><br>ICEU documents in the respective risk policies the supporting rationale for its holding of financial resources in accordance with the sizing calculation and allocation methodology.<br><br>Risk policies, including the ones that address the level of financial resources, are reviewed and approved by the relevant Risk Committee(s) and ICEU Board at least annually. In case of a rule change, or policy changes, regulatory approval will be required. The policy governance review calendar and Clearing Risk policies set out the ongoing role of the relevant Committee(s) including at least an annual review of the continued adequacy of the Margin and Guaranty Fund policies.<br><br>Changes to the models that affect the amount of total financial resources are considered by the CRD, submitted to the relevant Risk Committee, with any recommendations are presented to the President. Significant model changes also require Board and regulatory approvals.<br><br>Finally, risk waterfall models that calculate Clearing Member requirements are subject to regular testing. If the model calibration consistently demonstrates exceptions outside of the required tolerance, the CRD reviews the models and recommends revisions to the relevant Risk Committee and/or the Board in line with governance requirements. |

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| **Key Consideration 5** | **A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participant's increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.** |

ICEU determines the total financials resources based on the largest Cover 2 Losses i.e. largest uncollateralised stress losses of the two largest Clearing Member groups in extreme but plausible market conditions.

On a daily basis CRD runs and reviews stress testing results, identifies any deficiency or breach, and reports any such breaches to ICEU Senior Management. Any breach is systematically collateralised via Stress Margin (Stress Loss Charge), ensuring that the appropriate Cover2 coverage is maintained at all times.

Detailed anonymous stress testing results are reported and made available to the relevant Risk Committee(s) for review. The CRD provides an analysis and recommendation regarding the sizing of the Guaranty Fund as a function of the fund's performance (i.e. historical largest Cover 2 Losses against the size of Funds).

In addition, on a daily basis the Clearing Risk department publishes stress test results and breaches to ICEU Senior Management and senior stakeholders within the organisation.

Additionally, calls for Stress Margin (Stress Loss Charges), where applicable, are issued to Clearing Members to ensure the adequacy of ICEU's total financial resources.

On a monthly basis ICEU assesses the performance of its stress testing framework, with the results presented to the MOC. At least annually, the CRD conducts a comprehensive review of the stress testing framework and may, for instance, recommend under the appropriate governance the inclusion and/or exclusion of a particular stress scenarios. The annual review is presented to the Product Risk Committee and Client Risk Committee.

Under the existing framework, there is a preference not to reduce to the current standard scenario set. CRD has the ability to add new scenarios whenever required, subject to applicable regulatory notifications, to fully reflect changing market conditions, parameters, increased volatility or unusual positions. ICEU's stress testing programme is designed to take into account most risk factors identified, such as price moves along the curve, volatility shifts at any point on the surface, dividends and interest rates.

The Model Risk Governance Framework represents the instrument through which model risk of ICEU's models is managed.

In this capacity, the Model Risk Governance Framework establishes that risk models used in production shall be independently validated according to a validation cycle, in a manner which is compliant with regulatory requirements (i.e. annually). The Model Risk Governance Framework also defines that such exercises shall be designed to ensure that the model and its documentation meet the intended business requirements, minimum regulatory requirements and prescribed objectives.

The Model Risk Governance Framework is supported by, and operated via, strict governance arrangements, including the three lines of defense model (discussed under Principle 3) and a structure of accountable committees. Under the former, the Second Line is responsible for independently validating the models used by the Clearing Risk department (i.e. First Line). Specifically, the validation is the responsibility of the Risk Oversight department and may be carried out by the department itself or through the use of an external third-party validator. Governance related to validation and assessment of risk models is the responsibility of the senior management, the MOC and the Board (or delegated committee). Regulatory engagement is pursued according to applicable law.

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| **Key Consideration 6** | **In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.** |

ICEU maintains different approaches to stress testing scenarios, depending on the clearing service.

**For CDS:** The Single Name and Index sub-portfolios are subject to stress tests that reflect historically observed outcomes, as well as theoretically created scenarios. Additional highly unlikely stress test scenarios are used to assess the behaviour of the models and to estimate the consumption of the Guaranty Fund. The stress test scenarios are defined in price and spread space to improve the robustness of the approach. Correlation/offset stress scenarios are considered to assess the sensitivity to the provided portfolio benefits.

**For F&O:** For futures positions, each profit and loss will be calculated by shifting the value of risk factors under different scenarios. Settlement prices will be used as the basis for calculation of profit and loss together with each member's registered closing positions, which include intraday trades.

Option positions will be re-valued in each stress-testing scenario using the relevant underlying futures price and the implied volatility at settlement. Options will be re-baselined and re-priced using the relevant pricing model. The volatility smile for options is derived from the last available settlement volatility surface.

Stress test results are generated based on net positions and aggregated into the worst shortfall across all scenarios separately for House and Segregated Member accounts. These are then further aggregated conservatively with only gains on the House account being used to cover other accounts losses. Furthermore, a similar principle is used for Cover2 aggregation where counterparts, linked by ownership, are treated in a worst-case manner.

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| **Key consideration 7** | **An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.** |

The ICEU Default Rules deal with the application of assets upon an event of default, the powers of assessment reserved to the Clearing House in the event of there being relevant shortfalls and the use of the Guaranty Fund in this context. Moreover, the ICEU Clearing Rules allow ICEU in very extreme circumstances to use loss allocation techniques such as variation Margin gain haircutting, partial tear-ups, payment delays, amongst others.

Relevant liquidity policies provide detail in relation to the management of liquidity requirements.

Replenishment is required by the ICEU Clearing Rules in a number of contexts: through the utilisation of Powers of Assessment under Rules 909 - 911; in the Guaranty Fund context through Rule 1102(i) (i - v) and the specification of new amounts of Guaranty Fund being required in the event of the application of any Guaranty Fund Contributions; in relation to Non-Default, such as Investment Losses, through the mechanism of the indemnity provisions in Rule 919.

## 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.**

| Key consideration 1 | An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks. |
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The Collateral and Haircut Policy sets out the arrangements by which ICEU considers the eligibility of specific assets for inclusion on the List of Permitted Cover, Margin Cover and Limits on Collateral ("LoC") and the appropriate valuation and haircut procedures. ICEU has full discretion over which assets are accepted as Permitted and Margin Cover. Eligibility for being included on the List of Permitted Cover ("LoPC") is based on general principles set out in the Policy. All collateral must also meet the relevant requirements set out in, for example, the applicable EMIR RTS.

Proposals to accept any new forms of collateral are also presented to the relevant Risk Committees for review and approval prior to being added to the List of Permitted Cover.

The Policy is reviewed at least on an annual basis, or more frequently if there is a major change, by the relevant Risk Committees and the underlying model is independently validated, in line with the Model Risk Governance Framework, at least on an annual basis. The LoPC, collateral haircuts and limits are reviewed on a monthly basis by members of the Credit Risk, Risk Oversight and Compliance departments. Amendments to the List of Permitted Cover and collateral haircuts are communicated to Clearing Members by Circular from when updated and the live LoPC is available on the website. ICEU only accepts collateral from its Clearing Members in the form specified on the LoPC.

In line with section 6.1 of the Collateral and Haircut Procedures, ICEU monitors publicly available sources during each day for information that may affect the eligibility of collateral on the List of Permitted Cover, Margin Cover and Limits.

ICEU has daily procedures to monitor limits on collateral. The daily automated control to prevent relative limit breaches enables the identification and mitigation of specific and general Wrong Way Risk ("WWR"). ICEU analyses Clearing Members' non-cash collateral to identify WWR daily. Where ICEU identifies material WWR, ICEU requires the Clearing Member to take mitigating actions such as substituting the lodged Permitted Cover with alternative Permitted Cover.

Clearing Members are not permitted to provide collateral referenced on themselves. In general, wrong-way risk stress testing is designed to encourage that collateral provided is not correlated with the net futures/options position and also that Clearing Members' positions and collateral are not exposed to joint domicile risk. The new Emissions margin cover is accepted covering only short positions of the underlier of the futures contract and has strict limits and haircuts to take into account credit, market and liquidity risk of the underlying asset. Guaranty Fund contributions must be made using the appropriate referenced currency and is subject to a minimum cash portion.

| Key Consideration 2 | An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions. |
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In order to mitigate the risk of large intraday moves leading to significant losses of collateral value, ICEU monitors the collateral's price movements at least on an hourly basis. In the event the downward price movement breaches any security's haircut, the Clearing Member collateral portfolio that contains the affected security is fully revalued. If ICEU 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 ICEU will take steps to mitigate that risk by asking for additional collateral or collateral substitution. Collateral is valued as of End of Day each day and Clearing Members are not allowed to withdraw collateral which would leave them with uncovered credit exposures.

Collateral is marked to market on a daily basis and ICEU can indirectly exercise conservative discretion in valuing assets by changing the corresponding haircut percentage.

In the event that market failure results in inability to price collateral, Clearing Members may be required to replace the collateral with cash or other price transparent and acceptable collateral. In addition, ICEU has the ability to significantly increase haircuts in the short term to provide additional security with respect to collateral price valuation.

The haircut model is set out in the Collateral and Haircut Model.

Additionally, ICEU applies qualitative, but more conservative, overrides based on forward looking scenarios or certain market circumstances.

ICEU set its collateral haircuts using a 99.9% confidence level which is in line with the confidence level set for calibrating theoretical stress scenarios in order to ensure that the post haircut cover value of collateral includes stressed market observations. Additionally, ICEU applies a 25% stress period weight to some of its VaR models and a bid-ask spread adds another layer of conservatism.

Haircuts are reviewed on a monthly basis and monitored on a daily and intra-day basis to ensure the sufficiency of these haircuts such that any decline in asset value that breaches the applicable haircut is investigated. If this indicates that the prevailing haircut level is insufficient, a review will be conducted. Daily verification of data completeness and accuracy; and periodical data validation is also performed.

Additionally, ICEU also sets both relative and absolute limits for the amount of collateral from an individual issuer that a Clearing Member (or its group) may deposit. This ensures that ICEU will not have concentrated collateral positions to liquidate in the event of a Clearing Member default.

ICEU's Treasury department also performs an annual liquidation test to ensure ICEU has reliable arrangements in place to generate same day liquidity by selling high quality government securities, due to a Clearing Member default or difficult market event such as stressed market conditions.

The Collateral and Haircut Policy is reviewed on an annual basis by the relevant Risk Committees and is also independently reviewed annually as per the ICEU Model Risk Governance Framework.

| Key Consideration 3 | **In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.** |
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As the creditworthiness of an issuer deteriorates, haircuts are likely to increase, which may cause procyclical increases on Margin requirements for Clearing Members. ICEU limits the likelihood of such procyclical impact while ensuring that sufficient collateral continues to be in place by combining some or all of the following anti-procyclicality considerations:

- Applying a conservative minimum haircut level to all collateral types, regardless of issuer and tenor, to ensure haircuts are sufficient even in periods of low volatility;
- Including stressed market conditions in the haircuts;
- Pre-emptively identifying and including potential future events into the haircuts via the qualitative overlays and analytical tools to allow more gradual and pro-active increases in the haircuts; and
- Providing advance notice of changes in haircuts to Clearing Members and competent authorities.

| Key Consideration 4 | **An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.** |
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Collateral and Haircut Policy sets concentration limits based upon perceived market liquidity of eligible instruments, and controls collateral concentration by restricting all securities (except US Treasuries) to the lower of 35% (or a lower percentage for certain issuers) of portfolio requirement or by means of the relevant absolute collateral limit published in the List of Permitted Cover and Margin Cover for a certain issuer. Emissions as Margin Cover have absolute and relative limits to ensure the amount that may need to be liquidated is conservative.

Both absolute and relative collateral limits are monitored on a daily basis. In the event that a Clearing Member is in breach of a limit, the Clearing Member will be required to replace the collateral above the limits with alternative Permitted Cover or ICEU may call additional Margin to ensure it has sufficient collateral.

ICEU reviews and evaluates concentration policies and practices at least annually, as part of its annual review of the Collateral and Haircut Policy and in line with Model Risk Governance Framework. As part of the annual review, concentration policies and practices are subject to independent validation and a validation report is provided to the Model Oversight Committee and relevant Risk Committee highlighting any findings.

| Key Consideration 5 | **An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.** |
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Other than US FCM customer pledged collateral, ICEU takes all Margin and Guaranty Fund assets by way of title transfer and thus has title ownership for the vast majority of the assets it holds irrespective of its origin. ICEU has taken appropriate legal advice in relation to the manner in which it holds relevant assets and has structured its holding of relevant assets in such a way as to ensure, as far as possible, that ICEU itself has proprietary title and possession of such assets.

The preamble to Part 9 of the ICEU Clearing Rules confirms the characterisation of Part 9 under relevant legislation as variously “default rules”, containing a “default waterfall”, default proceedings, “default rules and procedures” and “default procedures” and the protections afforded to ICEU when taking relevant steps under Part 9. ICEU is also protected by the Settlement Finality Regulations.

ICEU has obtained legal opinions in relation to the enforceability of collateral. ICEU's Legal department and external counsel monitor legislative and judicial developments in relation to relevant matters as far as possible.

ICEU accepts collateral quoted in another currency rather than the liabilities it covers but this is limited to only three currencies (EUR, USD and GBP). In the Liquidity Stress test ("LST") ICEU test the available resources in currency in relation with any payment obligation (stress losses) in currency in order to meet ICEU's risk appetite. ICEU has various uncommitted FX facilities in place to mitigate temporary liquidity shortages or exchange assets in the currency of the loss experienced.

Collateral is provided to ICEU (in relation to Margin and Guaranty Fund) in accordance with the ICEU Clearing Rules. ICEU has received appropriate legal advice on the use of such collateral in a timely basis.

| **Key Consideration 6** | **An FMI should use a collateral management system that is well-designed and operationally flexible.** |
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The ECS, ICEU's collateral management system, is developed and maintained by ICE. The system is well established and used by all clearing houses within the ICE group. Regular maintenance and enhancement are executed in order to meet the changing demands of the market.

The ECS provides Clearing Members with information regarding the assets deposited and can be used by Clearing Members to instruct a deposit of cash, securities and other assets to the Clearing House and, when there is excess Margin in place, to instruct a withdrawal of assets held on deposit. The primary features of ECS are as follows:

- Real time update of positions;
- Overnight mark to market valuation;
- Hard limits on type and concentration of permitted collateral at Issuer level;
- 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.

Cash collateral is invested according to the terms and conditions set out in ICEU's Investment Management Policy. Eligible securities, deposited by Clearing Members, are placed with a custodian.

The collateral management system (ECS) is fully flexible to accommodate changes in acceptable collateral and also to changes in concentration limits, in each case at the ISIN level, subject to relevant internal governance.

Collateral requests are viewed via the clearing console (an internal system) and monitored by Treasury. Withdrawal requests exceeding excess collateral on the account will not be accepted.

ICEU's collateral management systems are designed to accept or reject changes (determined by the rules established to monitor acceptable collateral and concentration limits) with minimal manual intervention. ICEU Business Operation team is always staffed during publicised opening times and the team has sufficient scale to ensure smooth operations at all times.

IT system development and operational support for ECS is outsourced to ICE ICE's primary data center based in Chicago hosts ECS's production servers, while a secondary (Disaster Recovery "DR") site located in Atlanta provides real time redundancy in case of a technology disruption or incident.

## 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.**

| Key Consideration 1 | A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves. |
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ICEU uses a combination of Variation Margin ("VM") and Initial Margin ("IM"), amongst other requirements, to mitigate current and potential future exposures. IM deals with ICEU's potential future exposures whilst VM corresponds to current exposure. The general framework of ICEU's Margin system ensures that IM is set to an appropriate level allowing the close out of a defaulting Clearing Member's positions under the defined confidence interval and holding period. VM is the portfolio or segregated accounts positions' profit and loss (that is mark to market movement or settlement movement, as relevant).

Rule 502 grants ICEU's right to call and collect Margin from its Clearing Members and to set the eligibility and form of collateral (including use of haircuts) that may be lodged by Clearing Members with ICEU.

In addition to IM, where relevant, ICEU applies specific add-ons, e.g. liquidity and concentration charges, stress margin, jump to default and wrong way risk ("WWR") charges.

ICEU operates an intra-day risk system that allows ICEU to recalculate a Clearing Member's IM and VM near real time throughout the business day and to make intra-day Margin calls where necessary.

ICEU operates two Margin systems reflecting the differing nature of the risks within its CDS and F&O business.

**For CDS**: The IM requirements account for credit spread risk with portfolio benefits, recovery rate risk, interest rate risk, basis risk, jump-to-default ("JTD") risk (with the inclusion of WWR, bid-offer risk (liquidity exposure) and concentration risk. Features of the methodology include the estimation of the spread response by adopting the higher requirement among the result of two risk methodologies.

**For F&O**: Margin requirements are re-calculated separately for each account based on the ICE IRM V1.0 which is a scenario-based Margin system. To determine Margin parameters:

1) Energy uses the Filtered Historical Simulation ("FHS") methods barring a few exceptions; and

2) Financials & Softs ("F&S") uses parametric and historical simulation VaR approaches.

Note that Margin parameters based on parametric and historical simulation can be used for setting rates for option volatility credits and strategy Margins but also serve as comparison purposes to verify and potentially override rates calculated using the FHS process.

Other Margin requirements include, but are not limited to, are:

1) WWR requirements;

2) Concentration Charge requirement; and

3) Stress Margin (formerly labelled Stress Loss Charge).

There are policies, procedures and technical model descriptions that form the set of documents describing the Margin methodologies. The review and approvals of such documentation is subject to ICEU's internal and external governance processes.

While ICEU policies are not publicly disclosed, ICEU provides participants, pursuant to Article 10 of EMIR RTS 153/2013, with information on the Margin methodologies allowing them to replicate Margin calculations for their portfolios via procedure documentations, white papers and Margin parameter files, available in ICE Community (https://community.theice.com/community/ice_clear/ice_clear_europe/risk/apc-framework-disclosures/content). Upon request, ICEU also holds bespoke sessions with Clearing Members to clarify details of its Margin methodologies.

For CDS: the Risk API Calculator is available for all Clearing Members to replicate the Margins' methodology.

For F&O: the IRM V1.0 software is publicly available along with the daily IRM V1.0 Parameters files on ICEU's website, allowing Clearing Members and market participants to replicate ICEU IM Calculation.

The determinants of credit exposures for all contracts are: the volatility of the underlying market price, correlation of market price returns with other economically linked risk factors and change in implied volatility for non-linear contracts.

**For CDS**: Included within the CDS Margin calculation are the following credit risk determinants: Index-Single Names basis risk, recovery rate change risk, interest rate change risk, liquidity risk, concentration risk, JTD risk and WWR.

**For F&O**: In addition to core Margin, ICEU calculates additional Margin requirements reflecting, for instance, concentration of positions, market liquidity and specific WWR.

ICEU determines Margin requirements commensurate with the risks, and particular attributes of its CDS and F&O products. The IM of segregated accounts are aggregated across all products within either CDS or F&O. Portfolio benefits are only applied to positions within each asset class, i.e. CDS, Interest Rates, Equities, Agriculturals or Energy.

**For CDS**: the Margin requirements are driven by:

1) CDS Mark-to-Market Margin ("MTMM"), where marked to market price movements are credited/debited as appropriate; and

2) Initial Margin ("IM") on portfolio (segregated account) positions.

While MTMM is a Profit and Loss ("PnL") calculation based on the intraday and End of Day price, the IM is calculated through a statistical model in order to provide portfolio risk coverage against at least 5-day market realisations that would occur with probability 99.5%, or higher. The model performance is monitored via back-testing, stress testing, sensitivity testing and anti-procyclicality testing.

**For F&O**: the Margin requirements (at least collected on a daily basis) are driven by:

1) Variation Margin ("VM"), settlement price movements where profit and loss are credited/debited; and

2) Initial Margin ("IM") on portfolio (segregated account) positions.

While VM is a Profit and Loss ("PnL") calculation based on intraday and End of Day price, the IM is calculated via IRM V1.0 underpinned by Margin parameters. These parameters are set as per ICEU policies and procedures reflecting each product's specific risk such as its volatility and cyclicality.

Portfolios such as combination of trades on a same underlying (e.g. calendar spread) have also Margin parameters set in accordance with ICEU's policies and procedures and reflect specific portfolio ("spread" or "strategy trades") risk.

Furthermore, IRM V1.0 is supplemented with various Margin add-ons and buffers to adequately collateralise particular attributes of products and Clearing Member portfolios.

ICEU has extensive provision for addressing the risk of payment failure by a Clearing Member that would otherwise create a shortage of required Margin to the Clearing Member's position. These provisions are enforced throughout the Clearing Membership Agreement and the ICEU Clearing Rules (Part 9).

According to the ICEU Clearing Rules and Finance Procedures (Part 9 Default Rules, Rule 901-iv and the Finance Procedures Section 13.5), any delayed payment or payment failure could lead to an ‘Event of Default’ being declared. ICEU operates a default waterfall arrangement described in more detail in Principle 4, Credit Risk, and Principle 13, Participant Default Rules and Procedures.

In the event of ICEU declaring an 'Event of Default', ICEU will terminate the Defaulter’s membership and a Circular is issued to the broader market informing that the Clearing Member has defaulted. ICEU will therefore use as part of its default waterfall structure, but not limited to, the Defaulter’s IM (on House account) and Default Fund (or Guaranty Fund) contribution to meet the Defaulter’s obligations.

In particular, the Guaranty Fund mutualises losses in excess of its Margin on deposit. It is based on extreme but plausible market scenarios and is designed to provide adequate funds to cover losses associated with the default of the two largest Clearing Member groups including affiliates (i.e. uncollateralised losses).

Section 6 within the Finance Procedures set out the details of settlement times (including Bank Holidays) and arrangements for settling in different currencies.

As part of the on-boarding procedure, ICEU ensures any future Clearing Member has capacity to arrange the transfer of funds before the 9.00am (London local time) cut-off.

In order to accommodate different time zones, ICEU allows any currencies apart from GBP, Euro and US Dollars an additional day (“x+1 currency”) to be settled before 09:00 am (London local time). However, additional Margin is collected to ensure all liabilities inclusive of these pending Margin calls are covered.

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| **Key Consideration 2** | **A CCP should have a reliable source of timely price data for its Margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.** |

**For CDS**: CDS uses End of Day (“EOD”) Clearing Member price submissions to determine EOD prices, which are used for ICEU’s Margin model.

ICEU uses the International Swaps & Derivatives Association (“ISDA”) Standard Model to convert between the spread and the clean price (%) and vice versa. ICEU also uses the ISDA Standard Model to compute dirty prices for the determination of upfront fees.

**For F&O**: ICEU uses ICE Futures Europe, ICE Endex, ICE Futures Abu Dhabi, and ICE Futures US (the "Exchanges”) settlement prices as the main data source for its Margin model. EOD prices from the relevant Exchange are set according to the applicable Contract Procedures and available from the relevant Exchange’s web page.

ICEU uses returns (e.g. log return or absolute) derived from the Exchange prices in order to determine the Margin rate of a contract.

**For CDS**: ICEU’s CRD and Operations manage the EOD price discovery process on a day-to-day basis.

In accordance with the CDS EOD Price Discovery Policy, Clearing Members are required to submit prices on the benchmark tenors of the risk sub-factors with cleared open interest. ICEU ensures that Clearing Members submit reliable prices through the firm trade process, where, on random days and quarter ends, Clearing Members might be forced to clear trades on a specific instrument based on the price submitted during the end of day price discovery process. Clearing Members failing to submit prices are subject to cash assessments.

**For F&O**: The Exchanges have policies, procedures and rules in place to set End of Day Settlement Prices ("EDSP"). These procedures are recognised as standard practice by market participants.

Moreover, checks and validations are performed by the Market Settlement team before the publication of EOD prices and therefore before prices are communicated to the CRD for Margin purpose.

While the Exchange's principal role is to ensure timely and reliable prices, ICEU performs additional validations to ensure the integrity of its processes. When EDSP are published, checks are performed on the prices to prevent obvious settlement price errors, which could potentially result in incorrect VM requirements, and Margin parameters.

**For CDS**: ICEU requires all Clearing Members to provide daily EOD submissions for specific instruments related to their open interest at ICEU.

If too few Clearing Members have cleared open interest in a particular instrument to establish a reliable EOD price, ICEU may require all Clearing Members to provide submissions for that instrument if ICEU does not have a reliable method to establish EOD instrument levels.

**For F&O**: The Exchanges ensure that market prices that conform to its own criteria quality, are available. Price validation processes in place identify excessive, stale or anomalous price moves before completion of the settlement process leading to publication. In the unlikely event of a 'not readily available or reliable' price, ICEU may exercise its right under the Rules to override the Market's settlement prices (Rule 701). Amongst its options, ICEU could use previous day's close of business prices. All profits and losses resulting from these daily settlement prices (overridden or not) is credited and debited, as appropriate, to the relevant Clearing Members' accounts.

Independent validations performed within ICEU Model Risk Governance Framework ("MRGF") typically cover a minimum set of key aspects, such as: regulatory compliance, documentation and purpose, theory and application, development, performance, implementation and use (see Principle 6, Key Consideration 7, for further details). While some of these aspects may be directly influenced by the availability of reliable data, for others there is little impact.

ICEU ensures independence through the use of stringent requirements for the selection of validators, including:

i) no involvement or responsibility for any component of model development, implementation or operation relating to the model subject to validation;

ii) no involvement or responsibility for any upstream development process relating to an input feeding into the model being submitted for independent model validation; and

iii) for ICEU employees, a reporting line to the Chief Risk Officer.

Please, refer to the response at 6.2 above.

All other dynamic inputs feeding pricing models, follow the same level of validations and checks as prices (see 6.2.2) to ensure accurate pricing.

Additionally, all models are standard pricing models and standard data feeds. This is considered standard practice by market participants.

As specified in 6.2, the Rules state that ICEU has the right to override the Market's settlement prices in exceptional circumstances (Rule 701). These modifications are then reflected in the VM and the Margin Parameters.

Where the CRD has a concern that the model is not performing as required, Margins can be increased, or add-on requirements can be applied under the terms of the Rules to cover the identified risk.

| Key Consideration 3 | A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes. |
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**For CDS**: The Initial Margin ("IM") requirements account for credit spread risk with portfolio benefits, bid-offer risk (liquidity exposure), basis risk, JTD risk, concentration risk, interest rate risk and recovery rate risk. Features of the methodology include stress scenarios for credit spread realisations, derived from estimated log-return credit spread distribution assumptions, and specific stress scenarios for previously defined IM components. Collectively, ICEU believes this methodology and the selected risk parameters provide a robust and conservative IM approach.

The IM Methodology is intended to provide portfolio risk coverage against at least 5-day market realisations for house and 7 days for client accounts, that would occur with a probability of 99.5%, or higher. Therefore, the estimated requirements provide risk protection equivalent to, at least, 5-day 99.5% Value-at-Risk ("VaR") measure.

**For F&O**: ICEU determine potential future exposure (ICEU's Initial Margin) using the IRM V1.0 methodology.

The Margin model uses Margin rate parameters as inputs. These inputs are set to meet a confidence level of 99% over a one or two day holding period, in accordance with EMIR RTS 153/2013 Article 26.

IRM V1.0 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 IM. The algorithm then identifies pairs of contracts with different underlying instruments (within the same market) and apply a credit rate to opposite futures contracts in order to provide some level of diversification benefit.

These Margin model parameter assumptions are also disclosed via ICEU website in the following link: https://www.theice.com/clear-europe/risk-management.

Based on the above assumptions, the following parameters are estimated for both IM Methodologies:

**For CDS**: the following statistical parameters are calibrated for each benchmark tenor: four mean absolute deviations, auto-regressive coefficient, scale and shape parameters. Furthermore, it is estimated the correlation among tenors and risk sub-factors. Generally, the look-back period starts from the 1 April 2007 and the dataset is enriched of new observations as they become available.

In addition, the Margin model comprises of additional Margin components based on the calibration of the following parameters: concentration charge threshold, recovery rates, WWR correlations and thresholds, liquidity tenor and coupon scaling factors. These model parameters are calibrated by ICEU's CRD monthly and may rely on the input from the Risk Working Group ("RWG") and Trading Advisory Group ("TAG").

**For F&O**: IRM V1.0 is a parameter driven model which requires Margin rate parameters to be set and reviewed for each cleared contract. These are:

- Scanning range;
- Inter-month spread charge rates;

- Inter-contract spread credit rates;
- Option volatility shift parameters;
- Strategy spread Margin rates (such as Condors or Butterflies);
- Prompt date charge rates; and
- Volatility credit offset.

The rates are calculated using historical prices and returns over different time horizons.

**For CDS**: When calculating the underlying price volatility to be used for calculating Margin parameters, the CRD will use a five-day calculation period for house and 7 days for client accounts. The risk horizon consideration is consistent with the observed market behaviour during Lehman Brothers' ("LB") default. As LB was a large protection seller, the CDS market needed about three days to absorb the created risk dislocation, and to provide position replacement for market participants. In order to account for situations when it may not be possible to port clients after the pre-defined porting period, resulting in liquidation, the risk horizon for client portfolios is extended to seven days. Furthermore, the Margin model comprises two specific components to account for the additional costs that the Clearing House might incur during the liquidation process of the Clearing Member's defaulting portfolio: Liquidity Charge ("LC") and Concentration Charge ("CC"). LC accounts for the liquidation costs as portfolio's positions are marked at mid-price, whilst liquidation is performed at the bid or offer price; CC accounts for the additional liquidation costs given by the concentrated position in given risk factors, which would require additional costs in terms of bid or offer prices.

**For F&O**: ICEU determines an appropriate closeout period for each product by assessing the trading activity of such products and testing these via default drills.

The CRD regularly assesses different measures of market liquidity such as Average Daily Volume ("ADV") for all products, with a particular focus on concentrated contract positions. When ICEU's assessment of market liquidity and Member's portfolio positions do not meet these minimum criteria (i.e. longer holding period to potentially close out positions), ICEU will have additional Margin to cover for any liquidation shortfall, i.e. the concentration charge.

In the event of a default and positions on illiquid contracts (either due to the nature of the contract or to stress market conditions), the regular market liquidity assessment will drive higher concentration charges which ICEU can use to either:

1) Close out these positions at a loss; or
2) Hedge the positions and close out at a later date when market liquidity allows.

**For CDS**: The historical data to calibrate ICEU models includes periods of extreme market events such as the Bear Stearns collapse, the Lehman Brothers default, the US "Flash Crash", the European Sovereign Crisis, the Greek Crisis, the Brexit Referendum and Covid-19 period. As such, ICEU overcomes the limitations of benign historical data.

**For F&O**: When reviewing Margin parameters, price data will be analysed across multiple window lengths for all contracts as specified in the section 6.3. These lookback periods cover recent, new and past volatilities (i.e. 60, 100, 250 and 525 day windows) and aim to reflect the different risk profiles of the futures and option contracts cleared.

For new products with no historical data, ICEU uses two methods depending on the contract characteristics:

- Simulate historical prices up, to cover the largest time window using a pricing model and validated historical inputs; or
- Use a proxy historical data. A proxy shall be used only if it is from the same market, asset class/sector and closely related to the new product. A conservative cap will be applied on the credit offsets for certain inter-commodity spread credit parameters where proxies are used.

**For CDS**: The CDS IM model accounts specifically for the liquidity risk in the stress market conditions, i.e. the fact that positions are marked-to-market at the mid-price, but the liquidation price is at bid or offer. For each risk factor liquidity costs are scaled for less actively traded coupons and tenors in order to capture the relative decrease of liquidity in these instruments. Liquidity charges are computed at risk sub-factor and index family level and then aggregated at portfolio level without any portfolio benefit, in a conservative manner.

**For F&O**: As mentioned in section 6.3, ICEU regularly monitors market liquidity across all products.

ICEU assumes there is a level of trading activity which will have no material impact on the price and defines such ratio in terms of tradable volume. If the positions are concentrated such that the liquidation over the defined time horizon (i.e. two days) will exceed the tradable volume, the concentration charge applies and is calculated to cover either:

1) The extended potential future exposure over the period of liquidation without materially impacting the price; or

2) The cost of hedging the positions and closing out when the trade-off between liquidity and price allows.

To a large extent the Margin procyclicality is a product of the underlying price returns and the IM model configurations. Whilst the procyclicality induced by the underlying returns cannot be easily mitigated, ICEU endeavours to reduce the model procyclicality by applying the set of parameters which lead to the least de-stabilising Margins but without compromising the model performance. The anti-procyclical measure embedded in the IM calculation further prevents unwarranted levels of Margin procyclicality. The degree to which ICEU tolerates Margin procyclicality, as outlined in the procyclicality framework and disclosed on its website, is practised and tested on a daily basis. According to ICEU's own experience and broader market feedbacks, ICEU believes that the tolerance threshold is calibrated at appropriate levels.

**For CDS**: In order to address procyclicality, the CDS Margin methodology uses short term and long-term lookback periods in the volatility calculations.

ICEU avoids, where possible, disruptive or big step changes in Margin requirements and uses transparent and predictable procedures for adjusting Margin requirements in response to changing market conditions. The above considerations are compliant with both options (b) and (c) of Article 28 EMIR RTS 153/2013. The other Margin components are either non-material in terms of Margin requirements, such as interest rate sensitivity requirement and recovery rate sensitivity requirement, or anti-cyclical by construction, such as the JTD requirement, where credit spreads widening would lead to lower prices and, in turn, lower JTD requirements.

**For F&O**: ICEU has adopted Article 28 EMIR RTS 153/2013 option (b) where stress volatility is added to new volatility in order to address procyclicality. When stressed data is not available, stressed volatility from benchmark contracts (or proxy) will be used.

With regard to other Margin add-ons such as the concentration charge and WWR, ICEU considers the following factors to avoid procyclical Margin behaviour:

1) ICEU models its concentration charge based on its IM including the anti-procyclical measure. Considering concentration charge is simply a scaled IM, it achieves the same level of anti-procyclical behaviour as the core initial Margin.

2) The *averaged* trade volume used to assess the concentration level has a stabilising effect on the concentration charge.

3) The WWR Margin add-on, driven by a self-referencing Clearing Member position, is based on a set of conservative and simple assumptions which has no model element inducing an unwarranted level of Margin procyclicality.

**For CDS**: Specific Wrong Way Risk ("SWWR") arises due to Self-Referencing ("SR") contracts sold by a Clearing Member. SR contracts as outright positions are ineligible for Clearing. However, in the event there is a merger or acquisition between the Clearing Member and the reference entity that potentially creates outright SR positions, the CDS Risk Procedures detail that the ICEU may conduct an auction process to terminate all SR CDS contracts. Notwithstanding the above, SWWR exists for Clearing Members who are constituents of index cleared positions. In this case, additional Margin is called to address the risk. ICEU's Risk Methodology mutualises the largest self-referencing exposure up to a pre-defined threshold (see the Guaranty Fund section in 6.1.6) and fully collateralises any Clearing Member's self-referencing exposure above that threshold.

**For F&O**: SWWR can occur where a Clearing Member has positions in a derivative on its own stocks. To mitigate such risk, ICEU will consider all the positions that a Clearing Member group (i.e. combining positions where two or more Clearing

Members are linked by common ownership) holds in derivatives on its own stocks. This can include futures, put and call options, in each case both long and short positions.

A Profit and Loss ("PnL") is calculated for each derivative and subsequently the portfolio as a whole. ICEU calls for this PnL as additional WWR only when the PnL is negative (i.e. the Clearing Member incurs a loss).

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| **Key Consideration 4** | **A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.** |

ICEU, 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 (i.e. Variation Margin, VM) based on exchange 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.

For the EOD process, VMs are collected daily together with IMs and any other requirements. Payments are due by 9.00am London Time (refer to response at 6.1.7 for details). VM is also calculated intraday on a near real time basis comparing intraday most recent prices versus EOD settlement price. If the Clearing Member's intraday exposure exceeds pre-defined thresholds, an intraday Margin call including potential VM losses will be made that will have to be met within one hour. Differently than the EOD process, any VM amount collected intraday is held with the CCP and is not passed through.

The capability to issue intraday Margin calls is regulated by the F&O Risk Policy and Procedures, the CDS Risk Policy and enforced under Rule 503(c). Within these policies a Clearing Member whose intraday shortfall is eroded by pre-defined threshold shall be liable to an intraday call.

ICEU has implemented a full intraday Margining system that allows ICEU to consider updated prices and positions, enabling it to make a combined price and size driven intraday Margin call for IM and VM over extended intraday hours pursuant to Article 26 of EMIR RTS 153/2013.

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| **Key Consideration 5** | **In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.** |

The approaches to the use of offsets used by CDS and F&O are outlined below.

**For CDS**: ICEU allows offsets across single names, indices and between single names and indices. The ICEU Risk Management approach provides portfolio benefits. The portfolio benefits for index risk factors are based upon their single name decompositions. Additional portfolio benefits for risk factors that do not share any single names (basis) are provided by means of Kendall Tau rank-order correlations estimated from the time series of daily log-returns derived from credit spreads. There is a minimum threshold to ensure significant correlation levels. The correlation estimates are obtained by considering the most actively traded nodes of the credit term structures (curves). Portfolio benefits are limited to 20% of the sum of the requirements for each single name risk factor and index series pursuant to the ESMA opinion on portfolio margining under Article 27 of EMIR RTS 153/2013.

**For F&O**: ICEU allows offsets between two contracts if they are both within the same segment, i.e. between two oil contracts, but not between oil and interest rate contracts. The parameter itself is set as a percentage credit against the scanning range from the individual legs of the inter-commodity spread position and such percentage is restricted to 80% pursuant to Article 27 of EMIR RTS 153/2013. When deciding whether to provide risk offsets, ICEU calibrates offsets using a 2-day MPOR 99% VaR approach. There must be an economic rationale for provision of a risk offset.

Please, refer also to 6.5 above.

**For CDS:** Portfolio Margining offsets are granted where the price risk of one financial instrument or a set of financial instruments is significantly and reliably correlated, or based on equivalent statistical parameter of dependence, with the price risk of other financial instruments. For a given set of positions, long-short (hedge) benefits are provided. The profits and losses in response to a simulated set of spread scenarios are combined to determine the scenario profit/loss. Offsets are provided for the following: index decomposition benefits between index and single name risk factors, post index decomposition offsets across risk factors and post multi-currency offsets.

The CDS portfolio Margining approach and respective economic rationale applied is documented in the CDS Risk Model Description.

**For F&O**: ICEU recognises that different products within the same market may have associative relationships in the movement of their prices. The corresponding spreads between such products may reduce the risk in a portfolio. Because these spreads lessen risk, a credit (or reduction) is given on the amount of Margin assessed on a portfolio, this is the Inter Commodity Spread or Offset.

The amount of spread is determined by the relationship between the two products and is set by the Clearing Risk department using a 2-day MPOR 99% VaR approach. Spreads are sorted by the percentage savings, i.e. the highest percentage saving spread is given the highest priority.

There is no cross-Margining between ICEU and any other CCP.

**For CDS**: To assess and ensure the robustness of its portfolio methodologies, back-testing practices of actual and hypothetical portfolios are performed and reviewed on a regular basis.

Further, three different dependence structures are considered: historically observed, perfectly dependent and independent. The above risk measures at four quantiles are obtained to assess the sensitivity of the estimated risk measures to different dependence structures. The sum of the individual risk measures, known as total component risk measure, is estimated as well.

**For F&O**: ICEU runs daily macro back-testing (i.e. at portfolio level) to ensure sufficient collateral is collected to cover daily mark to market value. Insufficient collateral will lead to portfolio breaches and trigger a review of the individual parameters constituting the portfolio including inter-commodity offsets. ICEU also runs daily micro back-testing (i.e. at the risk factor level). For instance, back-testing on inter-commodity offsets ensure correlation has not broken between two legs since the last Margin update.

More generally, ICEU's back-testing regime provides feedback on the performance of the IM model. The IM model postulates a holding period and percentile confidence interval for Financials and Softs ("F&S") and Energy products. The goal is to monitor the IM model by evaluating the number of actual losses against the number of predicted losses to identify exceptions. The total number of exceptions is evaluated against the desired risk quantile and the model is considered well calibrated if the number of exceptions is consistent with the risk quantile. If the model calibration consistently demonstrates exceptions outside of the quantile, the Clearing Risk department will review the models, potentially increasing Margin rates or calling for additional requirements until the model is corrected.

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| **Key Consideration 6** | **A CCP should analyse and monitor its model performance and overall Margin coverage by conducting rigorous daily backtesting and at least monthly, and more frequently where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its Margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.** |

**For CDS**: CDS back-testing is performed daily using the production model for every business day in the available period prior to the current date. The back-tested results reflect the model performance for portfolios in each account. Projected Value at Risk ("VaR") measures and exceedances are calculated at 99.5%. The Basel Traffic Light System ("BTLS") exceedance summary results are provided on a weekly basis to the PRC and regulators. The projected measure is defined as the sum of Spread Response ("SR"), Recovery Rate requirement ("RR"), Basis Risk ("BR") and Interest Rate risk ("IR") for the considered quantile. Further back-testing on hypothetical portfolios is conducted on at least a monthly basis (or more frequently when appropriate) in order to assess the model performance for special strategies, such as index arbitrage portfolios.

**For F&O**: CRD calculates the IM requirement to a 99% confidence level over a one and two day time horizon at the individual product parameter level and at Clearing Member account level. In order to check IM requirements were sufficient to cover 99% of market price movements over a one- or two-day time horizon, back-testing is conducted against clean PnL.

The CRD checks the adequacy of the level of IM at a portfolio level (macro) and at the individual contract level (Margin parameters or micro level) daily. Where losses for a portfolio (or the absolute change in PnL for Margin parameters) is greater than the IM for that portfolio (or Margin parameters), a "breach" occurs. Any micro or macro back-test breaches are reported internally within the CRD and details summarised for the F&O PRC. Back-test breaches are also reviewed at the Model Monitoring Group and reported to the Model Oversight Committee ("MOC"). Portfolio back-tests are calculated separately for the house account and segregated client account positions (i.e. at Clearing Members' Margin account level).

There is no cross-Margining between ICEU and any other CCP.

**For CDS**: The ICEU CDS IM methodology uses a wide range of parameters and assumptions to capture a variety of historical and hypothetical conditions, including the most volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices of contracts cleared by the CCP. These tests support the CCP in understanding how the level of Margin coverage might be affected by highly stressed market conditions.

The detailed description of the correlation sensitivity analysis is described in the section 6.5.4.

ICEU performs a sensitivity analysis on monthly basis by applying the stress mean absolute deviation (the measure for the volatility) based on the most-volatile period that has been experienced for the estimation of the spread response requirement.

ICEU runs recovery rate sensitivities to capture potential losses associated with changes in the market implied recovery rate. This sensitivity analysis results in additional collateralisation referred to as the Recovery Rate Sensitivity Requirements in the IM model. For the two scenarios sets that yield the greatest Guaranty Fund consumptions, ICEU incorporates an additional sensitivity analysis based on incremental changes of the implied recovery rates, according to the sector classifications of the reference entities. The incremental changes start at the sector minimum recovery rates and increase to the sector maximum recovery rates in steps of 10%.

**For F&O**: ICEU applies different types of sensitivity analysis relevant to the underlying IM models. For the filtered simulation model, ICEU applies different EWMA lambda values. For all IM models, including the filtered simulation, ICEU applies different confidence levels to the Margin model in order to determine its sensitivity at the parameters level and portfolio level. Sensitivity analysis is performed daily.

There have not been any known Margin model shortcomings identified based solely on back-testing and sensitivity analyses. These tools, together with other mechanisms, help to ensure model risk is appropriately managed. Back-testing and sensitivity analysis results have, nonetheless, supported BAU parameter recalibrations to ensure the level of confidence on the model remains appropriate.

**For CDS**: The number of exceedances shall be monitored and member portfolios registering breaches outside of the green zone of the Basel Traffic Light System are investigated. For exceedances in the red zone, additional Margin requirements shall be applied to remediate the most significant breaches while the model is reviewed. Immediate escalation is required to the responsible Director of Clearing Risk and the Head of Risk. Exceedances in the yellow zone shall trigger a review by the responsible risk analyst, with the responsible Director of Clearing Risk assessing whether remedial action, consistent with a red zone breach, should be taken.

If poor back-testing results are identified for certain Risk Factor ("RFs"), an analysis is carried out on the spread log-return distribution assumptions, estimation techniques and estimated parameters, e.g. tail parameters, Mean Absolute Deviation ("MAD") and shape scales. The CRD may update the RF parameters by including the latest market observations and recalibrating. CRD may also introduce SN specific shape factors to remediate the poor univariate back-testing results and may set increased minimum MAD scales corresponding to more volatile market conditions. Recovery rate changes may be also analysed. Further investigation of the IM model shall be undertaken and a direct comparison with the Monte Carlo results will be considered. The dependence among RFs and the Kendall Tau matrix, which is used to provide portfolio benefits, will be investigated.

The CRD will make the appropriate model changes in a timely manner to adequately Margin portfolios that exhibit poor back-testing. This can be done by recalibrating the model parameters, or by applying a super Margin whilst the under-performance of the model is being investigated. If needed, the CRD will recommend model revisions to the CDS Risk Committee and the Board for their review.

Back-testing results which would identify potential shortcomings are also communicated to the PRC and regulators on a weekly basis to ensure transparency.

**For F&O**: The set of actions to be taken following the under-performance of a model is dependent on its severity, measured in accordance with the Basel Traffic Light System, i.e. categorization under Green, Yellow or Red Zones dependent on the number of breaches.

Different options are available for the CCP, from parameters update to model change. Importantly, additional Margin can be applied as a remediation for portfolios while the model is being reviewed. Any change to the portfolio composition shall be factored into the level of additional Margin applied. Immediate escalation is required to the Head of Risk. Any change to parameters or the model would follow the appropriate governance including, for instance, approval from the President and/or MOC. In the particular case of a model change, the Model Risk Governance Framework should apply.

Back-testing results which would identify potential shortcomings are communicated to ICEU regulators regularly to ensure transparency.

Results are also disclosed in an aggregated form that does not breach confidentiality in the Quarterly Quantitative Disclosure form. Results are provided to the Bank of England and other regulators.

| **Key Consideration 7** | **A CCP should regularly review and validate its Margin system.** |
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F&O/CDS (all of section 7):

The MRGF represents the instrument through which model risk of Margin models is managed within ICEU.

In this capacity, the MRGF establishes that risk models used in production shall be independently validated according to a validation cycle, compliant with regulatory requirements (i.e. annually). The MRGF also defines that such exercises shall be designed to ensure that the model and its documentation meet the intended business requirements, minimum regulatory requirements and prescribed objectives. Production models are also subject to performance assessments, which aims at monitoring the behaviour of models, and model risk, in-between validations. These assessments represent an important mechanism to evaluate whether the empirical properties of a model continue to be adequate and as expected. Amongst other aspects, the performance assessments include back-testing, sensitivity testing, stress testing, procyclicality testing and pricing testing. Most tests are performed daily and reported in different timeframes depending on the audience.

The MRGF is supported by, and operated via, strict governance arrangements, including the three lines of defense model (discussed under Principle 3) and a structure of accountable committees. Under the former, the second line is responsible for independently validating the models used by the CRD (i.e. first line). With regard to performance assessments, the CRD runs the tests, with the oversight from the second line. If needed, the second line also runs a complementary, but distinct, set of tests. The third line audits the work performed. Governance related to validation and assessment of risk models is the responsibility of the senior management, the MOC, and the Board (or delegated committee). Regulatory engagement is pursued according to applicable law.

New models, model changes and models under a retirement process are also under the scope of the MRGF, with similar operationalization and governance arrangements as those performed for production models. The process defined within the MRGF establishes that all model changes be properly justified, approved, documented and verified for accuracy by the model owner. Model changes are categorised into significant and not significant, in accordance with the applicable law and the existing regulatory guidelines.

In the case of revisions and adjustments related to a Margin methodology which are not considered a model change (e.g. use, governance, parameterisation, etc.), control processes are also established by ICEU, according to the type of the alteration. For instance, alterations to parameters are governed by the schedule of parameters and reviews that establishes, amongst other aspects frequency of the reviews, level of approval necessary and threshold for parameters. The second line oversees the CRD impact assessments, and appropriate governance is performed by the departmental control meetings and the MOC.

Disclosure of independent validation exercises and performance assessments varies across stakeholders. Senior management, the MOC, the Board (or its delegated committee), and regulators have access to full reports. The PRCs are notified of the review results and validation exercises.

## 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.**

| Key Consideration 1 | An FMI should have a robust framework to manage its liquidity risks from its members, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities. |
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ICEU's approach to liquidity risk management is documented in the Liquidity and Investment Management Policy which is supported by the:

- Liquidity Management Procedures
- Investment Management Procedures

The liquidity risk management framework (comprised of the Liquidity and Investment Management Policy, the Liquidity Management Procedures and the Investment Management Procedures) is subject to annual independent validation and is designed to ensure a high level of confidence in ICEU'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 ICEU's potential future liquidity needs (operationally BAU as well as for default liquidity needs) under a wide range of potential stress scenarios. For the purpose of liquidity stress testing, the resources included in the immediate liquidity available to ICEU for the regulatory and best practice scenarios are the investment trades maturing on the day, the outright purchased treasuries, cash held at Central Banks, ICEU capital and the defaulting Clearing Member's highly liquid non-cash assets. The Liquidity Management Procedures cover the implementation of the liquidity risk management framework in normal and stressed situations.

The purpose of the liquidity risk management framework and the supporting procedures is to outline ICEU's approach to cover for the liquidity needs in all relevant currencies in the following respects:

- Defining and implementing effective operational and analytical tools to identify, measure and monitor its settlement and funding flows on an on-going and timely basis;
- Completing regular assessment of the design and operation of the liquidity management framework, taking into consideration the results of the stress tests;
- Managing and monitoring, at least on a daily basis, its liquidity needs across a range of market scenarios;
- Maintaining sufficient liquid financial resources to cover its liquidity needs and distinguish between the use of the different types of liquid resources;
- Assessing and valuing the liquid assets available daily to ICEU and its liquidity needs;
- Identifying sources of liquidity risk;
- Assessing timescales over which ICEU's liquid financial resources should be available;
- Considering potential liquidity needs stemming from Clearing Members' ability to swap cash for non-cash collateral;
- Identifying the processes in the event of liquidity shortfalls;
- Identifying the process for the replenishment of any liquid financial resources it may employ during a stress event; and
- Documenting the governance structure of the framework.

ICEU's intention is to hold sufficient liquid resources to meet liquidity needs in the scenario of the default of the two largest Clearing Members, including affiliates. Each morning, as described above, the total cash available, net of announced withdrawals by Clearing Members and potential default loss (in extreme but plausible market conditions), is determined. The amount to be included in the stress loss associated with the defaulting Clearing Members is calculated to a 99.9% confidence level.

The main sources of liquidity needs considered are:

- the potential default of Clearing Members and their affiliates, resulting in Variation Margin payment requirements, settlement obligations, hedging and or liquidation costs;
- The unavailability of Investment Agents resulting in reductions in available liquid resources;
- the operational liquidity requirements, such as excess withdrawals, changes to Margin requirements due to position changes or Margin updates; and
- the technical issues, such as outages of service providers outages or disruptions.

Per the liquidity risk management framework, the stress losses presumed in the liquidity stress tests are from the default of a Clearing Member, across all clearing products, in all legal entities and in all its roles with respect to the Clearing House. The Clearing House also consider the liquidity risk of the Clearing Member when they act as Investment Agents.

| **Key Consideration 2** | **An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.** |
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The Treasury department provides at least daily forecasts of available liquidity by currency, using the Stress Test Scenarios. The Treasury department uses web-based proprietary access tools to perform enquiry activities on its bank accounts and utilises SWIFT message confirmations to monitor payment status and derive cash balances. The flow of payments is monitored intraday, commencing at 07:30 am until the end of the business day (the last call can be issued at 08:00pm GMT, to be paid by 09:00pm GMT).

Reporting is defined within the liquidity risk management framework. For regulatory oversight purposes, the Bank of England receives reports from ICEU of intraday exposures to the APS and settlement banks on a quarterly basis.

Stress testing and Treasury & Investment Report results are reported daily to Senior Management. The Risk Oversight department, as a second line function, reports related management thresholds and board risk appetite metrics, highlighting any breaches. Management thresholds are defined to be early warning indicators and not necessarily an indication of liquidity deficiency.

In the daily processing cycle ICEU monitors the outstanding payment requests and generated payments throughout the working day and additionally at key moments within the day.

“End of Day” (EOD)/Overnight Cash flow Assessment:

Most payments are generated in the daily End of Day (EOD) process. The payments include:

- Variation Margin (“VM”);
- Initial Margin (‘’IM’’);
- Automatic withdrawal instructions of excess IM and VM amounts;
- Deliveries and
- Incidental cash postings

Clearing Members are not permitted to have over-drawn accounts with ICEU or to maintain any uncovered positions. ICEU calls cash funds from each Clearing Member using a direct-debit facility on their APS accounts held with an approved Financial Service Provider (“FSP”). Clearing Members are permitted to request return of excess cash funds via their APS account, either as an automated process (Auto Release via EOD process) or as an ad-hoc request by instructing via the ECS portal within the cut off times.

EOD processing:

As part of the EOD process and prior to releasing the payment instructions to the relevant AFI, the Operations department compares actual VM flows to expected VM flows. Any deviations outside of tolerance levels are escalated with Operations management, the Clearing Risk department and, if necessary, the Treasury department.

EOD cash calls:

At 09:00 am all cash calls resulting from the EOD process must be confirmed by the AFI. From the start of day (07:30 am) outstanding Margin calls are monitored by the Treasury department. For outstanding cash calls, Treasury contacts the APS bank and Operations contacts the Clearing Member(s). At 08:30 GMT, ICEU's Senior Management, Compliance, Operations and Clearing Risk departments are notified of any outstanding Margin calls. Treasury and ICEU Senior Management then take appropriate steps to ensure liquidity levels remain adequate in the event that a cash call remains delayed or not met (e.g. invoking default management procedures).

Intra-day Liquidity Management:

The Clearing Risk department monitors the intra-day Clearing Member credit exposures to ICEU and processes on a real-time basis for all clearing positions and contract prices. Results of the intraday asset price assessment of non-cash collateral posted by Clearing Members as Margin cover will also feed into the intra-day monitoring process. When the threshold is breached by the Clearing Member, the risk department will trigger an Intraday Margin Call which must be paid within the hour.

The Investment Management Procedures provide guidance to ensure the availability of cash, to meet the payment obligations. The compliance check of this procedure is monitored via the Treasury & Investment Report.

| **Key Consideration 3** | **A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or 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 payment obligation in extreme but plausible market conditions.** |
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N/A for CCP

| **Key Consideration 4** | **A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time 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 payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two members and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.** |
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In its Liquidity Stress Testing scenarios, ICEU evaluates its payment obligations to the non-defaulting Clearing Members, based upon the defaulting party payment obligations. The scenarios considered include the default of the two largest Clearing Members, outages of service providers and members' collateral management activities.

The Liquidity and Investment Management Policy sets out the principles applied to cash and collateral management to ensure the Clearing House has access to liquidity for an amount equivalent to the extreme but plausible stressed losses attributable to its two largest Clearing Members. The total cash available, net of announced withdrawals by Clearing Members, is determined every day.

It is ICEU's intention is to hold liquid resources, and not encounter liquidity shortfalls, based on cover 2 protection in a stress scenario where the losses are attributable to its two largest Clearing Members, including affiliates. As described above, the total cash available, net of announced withdrawals by members and potential default loss (in extreme but plausible market conditions), is determined on a daily basis. The amount to be included in the default stress tests is calculated with a 99.9% confidence level for stress losses.

ICEU is involved in activities with complex risk profiles, including clearing financial instruments that are characterised by discrete jump-to-default price changes (amongst others). ICEU maintains financial resources sufficient to cover a wide range of scenarios (see below), that would cover the default of the two Clearing Members and their affiliates that would generate the largest aggregate payment obligation to ICEU in extreme but plausible market conditions (see 7.1.2. above). The complexity of the risk profile will be expressed in the stressed loss of defaulting Members in the LST.

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| **Key Consideration 5** | **For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.** |

The Liquidity Stress Test scenarios have been constructed so as to capture the main liquidity risks faced by ICEU. The actual amount of liquidity risk varies daily, in accordance with Clearing Members' clearing positions, clearing events (such as deliveries), investment counterparty positions and Clearing Members' liability cover arrangements. The liquidity stress losses should be covered with same day liquid resources. The collateral included in the liquid resources can be liquidated on a same day basis. Liquidity resources would include, cash deposits, maturing reverse repo or sovereigns, cash generated from sale of collateral, committed credit or repo lines.

Qualifying liquid resources:

The immediate liquidity available to ICEU is inherent within the Margin collection and investment arrangements. For the purpose of Liquidity Stress Testing, only resources which are readily available and convertible into cash are included.

ICEU uses securities held on account as collateral for intra-day loans to facilitate payment processing in a timely manner.

However, although these facilities are used on a daily basis, the amount of intra-day facility is neither disclosed by the provider nor committed. It is therefore not used for assessing ICEU's immediate available liquidity for stress test scenarios.

- ICEU has in place committed repo facilities in 3 major currencies available with same day liquidity
- ICEU tests the liquidation of assets annually

Arrangements to generate liquidity from resources which are readily available and convertible into cash are considered as prearranged because ICEU maintains an active relationship with bond brokers for bond pricing, market colour and trade execution. In addition, ICEU conducts periodic tests for liquidating bonds with these bond brokers. These arrangements are considered highly reliable because the brokers are not taking or credit risk against ICEU and are merely providing access to the market.

All minimum liquid resource requirements of ICEU are fully met by qualifying liquid resources. This is calculated in the liquidity stress test daily.

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| **Key Consideration 6** | **An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An** |

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| | **FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.** |

The additional facilities are:

- Uncommitted intraday liquidity provided by settlement and concentration banks (undisclosed);
- Non-emergency liquidity facilities at Central Banks; and
- Cash currency substitution via Foreign Exchange through a variety of established relationships.

ICEU conducts at least once a year liquidation test in which brokers are requested to price the liquidation of a large portfolio of securities on a same day basis.

Ability to access liquidity resources over and above those stated in the "immediate liquidity available" defined above will depend on timing (time of day) and currency of the requirement, but in general they are available ''on demand''.

Size and availability of qualifying liquid resources to cover minimum requirements in each currency to effect settlement of payment obligations is monitored and reported under the liquidity risk management framework.

These supplemental assets all qualify as potential collateral accepted by the Bank of England.

Size and availability of qualifying liquid resources to cover minimum requirements in each currency to effect settlement of payment obligations, as monitored and reported under the liquidity risk management framework.

The major cash outflow is a result of a simultaneous default of two or more large Clearing Members in a serious market condition. During such a situation, it is highly likely more funds will be held on an overnight basis. When such a situation is imminent the additional facilities can be used to generate additional liquidity.

The liquidity needs are fully covered with qualifying liquid resources. Liquidity resources and liquidity needs are evaluated on a daily basis.

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| **Key consideration 7** | **An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.** |

ICEU use liquidity providers to liquidate the supplemental liquid resources, refer to 7.6.1 for these facilities.
Counterparties for ICEU's liquidation facilities include:

- Committed Repo facilities provided by regulated counterparties
- Market brokers to assist in liquidation transition
- The Bank of England Discount Window Facilities
- The Bank of England Operational Standing Facilities

These arrangements are tested periodically.

Due diligence is conducted on an annual basis.

For committed repo lines ICEU requires the counterparties to have access to Central Bank credit.

Annual testing referred to in 7.6.2. In accordance with EMIR / UK EMIR Article 44 and EMIR / UK EMIR RTS Article 33, evidence that financial instruments included as available resources in the liquidity stress tests is readily available and can be converted into cash on a same-day basis using both committed and uncommitted pre-arranged and highly reliable funding arrangements is required. This is met by undertaking annual testing.

| Key Consideration 8 | An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk. |
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ICEU has access to and utilises the European Central Bank ("ECB") to deposit EUR on account in the Payments Module ("PM") of TARGET2. An account in the PM enables the institution to participate independently in payment transactions. These funds are immediately available to meet EUR payment obligations.

ICEU has access to and utilises the Bank of England as a GBP concentration bank and has access to a reserve account at the Bank of England. These funds are immediate available to meet GBP payment obligations.

ICEU does not have a USD Federal Reserve account to settle and hold US securities in its own name. Legal agreements with investment agents and custodian banks have been agreed to safeguard assets.

Securities transferred to ICEU as Margin by Clearing Members, which are not USD denominated, are held in accounts in ICEU's name at the relevant CSD. This collateral is held at Euroclear UK & Ireland and Euroclear Bank. The exception is US Treasuries, where the accounts with the Federal Reserve, containing only ICEU assets, are held by a dedicated commercial bank (JP Morgan Chase) ICEU also supports the use of Triparty Agents Euroclear Bank and Clearstream Banking S.A., both of which support the use of all denominations.

| Key Consideration 9 | An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains. |
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Liquidity stress testing is conducted daily and reported to Senior Management.

Liquidity stress testing is conducted daily and reported to Senior Management with any possible associated breaches. Management Thresholds act as early indicators, breaches to Risk Appetite Metrics are reported to the Board by the Risk Oversight department. A ''RED'' Risk Appetite Metric (RAM), will result in immediate Board escalation. Treasury department uses web-based proprietary access tools to perform enquiry activities on its bank accounts and to utilise SWIFT message confirmations to monitor payment status and derive cash balances. The Treasury department monitor the flow of payments commencing at 07:30 am and finishing following the completion of the last Margin call.

ICEU is able to provide forecast reports of transactions for any duration at any point in time.

Reporting is defined within the liquidity risk management framework. For regulatory oversight purposes, the Bank of England receives reports from ICEU of intraday exposures to the APS and Settlement banks (quarterly) and LST results are shared with the Bank weekly.

The liquidity stress losses are derived from default stresses in extreme historical and theoretical scenarios, based on scenarios for Cover 2 which calculates how much liquidity there is needed to handle the largest stress exposure from the two largest Clearing Members and their affiliates. ICEU assumes in a default stress scenario that all extreme market conditions are captured. 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 liquidity stress test. For further information regarding this, please refer to Principle 3 section 4.

Liquidity scenarios and stress tests are ICEU specific and take account of ICEU payment and settlement structure and the liquidity risk that is borne directly by ICEU, by ICEU members, or both.

In the calculation of liquidity stress losses ICEU aggregates the various entities of the Clearing Member to Group level and the various roles they play with respect to the Clearing House.

| Key Consideration 10 | **An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its members. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.** |
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The ICEU's liquidity risk management framework is designed so that ICEU holds an amount of liquid assets which are readily converted to cash at least equivalent to its estimate of the potential stressed losses that could arise from the default of its two largest Clearing Members. The key features of ICEU Clearing Rules (Rule 502), policies and procedures that enable it to settle payment obligations on time following any individual or combined default among its members include the following:

- Liquidity needs are met with liquid resources
- Contingency arrangements that are in place with the service providers
- Access to committed facilities
- ICEU operates a withdrawal deadline so that it can anticipate its cash needs and availability
- ICEU has the capability to impose additional Margin requirements
- ICEU Investment Management Procedures are designed so that ICEU's assets held are highly liquid instruments
- Powers of Assessment ("PoA") - Rules 909 - 911, 1102
- Reduced Gains Distribution ("RGD") - Rule 914
- Partial Tear-Ups - Rule 915
- Payment Delays - Rule 110
- Invoicing Back- Rule 104
- Investment Loss Allocation Rule - 919
- Capital Replenishment Framework ("CRF")

Powers of Assessment ("PoA") - Rule 909

- ICEU can require Clearing Members to pay additional funds to further mutualise default losses, up to the value of two times each Clearing Member's GF contribution for F&O products (per default event) and one times each Clearing Member's GF contribution for CDS products (per default event);
- ICEU can call any amount up to the maximums, can call multiple times and can also call the maximum amounts without calling smaller amounts first;
- ICEU will return any unused amounts to Clearing Members after Recovery is resolved;
- PoA can (and should) be assessed proactively at the point of default. PoA can be used before running default auctions in order to improve the likely success of the auction, rather than waiting for an auction to fail before using PoA;
- PoA can only be used in a Default Loss scenario; and
- PoA can be collected intraday as an intraday Margin call and is required to be paid within the intraday Margin call deadline.

Capital Replenishment Framework ("CRF")

- The CRF covers ICEU's options for replenishing capital, including raising additional capital, through the ICE Group and third parties;

- The CRF also includes insurance cover, which may be available to cover certain losses. However, it is noted that the insurance cover is unlikely to release funds quickly and recovery scenarios are likely to be time sensitive. Insurance cover is therefore more likely to provide confidence to other parties (including the ICE Group) for supplying additional capital to ICEU, rather than as a source of capital in the recovery itself;
- The CRF can be used in both Default and Non-default Loss scenarios;
- The timescales will depend on the specific sources of additional capital. For example, funds from ICE Group may be able to be provided in a matter of days, whereas funds from third parties may take multiple days, weeks or months; and
- Additional capital through the CRF is by no means guaranteed, either from ICE Group or from third parties.

The effect of the rights available to ICEU under the ICEU Clearing Rules is not included in determining the liquidity available for any of the Stress Test scenarios.

## 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. | |
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| **Key consideration 1** | **An FMI's rules and procedures should clearly define the point at which settlement is final.** |

ICEU is the system operator of a Designated System for the purposes of the Financial Markets and Insolvency (Settlement Finality) Regulations 1999 (SI 1999/2979) ("Settlement Finality Regulations") in respect of "Transfer Orders" identified in the ICEU Clearing Rules, which represent the payment and transfer obligations between ICEU and Clearing Members.

The point at which each different kind of Transfer Order becomes irrevocable is documented in Rule 1203 of the ICEU Clearing Rules, which sets out detailed provisions on when various types of Transfer Order become irrevocable.

The ICEU Clearing Rules are publicly available at:
https://www.theice.com/publicdocs/clear_europe/rulebooks/rules/Clearing_Rules.pdf

ICEU obtains legal opinions from external counsel on the enforceability of its Clearing Rules in the UK (including with respect to the application of the Settlement Finality Regulations and Part VII of the Companies Act 1989) and all jurisdictions in which it has Clearing Members, to provide assurance of a high degree of legal certainty that finality will be achieved in all relevant jurisdictions.

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| **Key Consideration 2** | **An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.** |

ICEU is the system operator of a Designated System for the purposes of the Settlement Finality Regulations in respect of Transfer Orders and this system is intraday, thereby ensuring that final settlement occurs in the same day of the intended value date. Confirmation of settlement is generated by the Designated System and communicated via an automated messaging system to the relevant Clearing Member.

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| **Key Consideration 3** | **An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.** |

Please refer to 8.1 in relation to the irrevocability of Transfer Orders under the Settlement Finality Regulations and Rule 1203 of the ICEU Clearing Rules.

Rule 1203 of the ICEU Clearing Rules defines precisely the point at which each Transfer Order arising under the ICEU Clearing Rules becomes irrevocable.

Rule 1204 of the ICEU Clearing Rules only permits variations to or cancellations of Transfer Orders that are not irrevocable.

Prior to a Transfer Order becoming irrevocable under Rule 1203, Clearing Members may cancel or amend settlement instructions in the circumstances allowed under Rule 1204. This is usually when ICEU sends settlement instructions to its custodian.

All unsettled transactions are automatically cancelled at the end of each day in ECS. If the relevant settlement system or depository does not support one sided cancellations and the transaction settles after the contractual settlement date, relevant securities will not be considered as Permitted Cover. If same day settlement does not occur but the Clearing Member still wishes to make settlement, it must cancel the instruction and re-enter that instruction.

No exceptions or extensions are allowed after the point of irrevocability set out in Rule 1203.

Revocations and amendments are only allowed prior to irrevocability, in the circumstances set out in Rule 1204.

This information is defined in Part 12 of the ICEU Clearing Rules.

## PRINCIPLE 9: MONEY SETTLEMENT

**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.**

| **Key Consideration 1** | **An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks** |
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| The Clearing House operates the APS an embedded payment system to transfer cash Margin, Default Fund contribution and to make and receive other payments. The APS consists of a network of settlement banks that facilitates the transfer of funds between the Clearing House and its Clearing Members. The Clearing House holds account at each of these settlement banks and the Clearing Members must hold accounts with any one of these banks. Once payments are made and received from each settlement bank, net balances are transferred to Concentration banks. ICEU uses Central Banks as concentration banks where possible. The APS is a payment system recognised by the Bank of England. | |
| **Key Consideration 2** | **If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.** |
| The ICEU Clearing Rules surrounding extended Clearing Members' liability ensures that losses stemming from the failure of a payment bank would remain with the members who choose to use that bank to make and receive payments. This members' responsibility ceases upon transfer of funds to the concentration bank. ICEU performs immediate intraday sweeps from the settlement banks to the concentration banks.<br><br>In order to become an APS bank, a set of requirements need to be met, as per the ''ICE Clear Europe APS Banks Requirements''. These include, inter alia, the following:<br><br>• Criteria for credit worthiness including the requirement that the APS Bank must have Standard & Poor's ("S&P") short term and long-term ratings of 'A' or better or the equivalent from other approved agencies. | |
| **Key Consideration 3** | **If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.** |
| At point of the onboarding, and on an annual basis, a due diligence is performed on each APS bank. As part of this process ICEU provides the APS bank with a Due Diligence Questionnaire ("Questionnaire") on its organisational structure, network security, liquidity, creditworthiness, and BCP and Disaster Recovery. The completed questionnaires are then reviewed by the Credit Risk, Information Security and Vendor Management departments. A | |

due diligence visit is also conducted, where appropriate. The APS bank is expected to meet on-going requirements represented in the due diligence for the continuation of the relationship.

In addition, each APS bank is subjected to daily checks by the CRD to ensure compliance with the applicable requirements from a credit risk perspective. Similarly, the Treasury department monitors the operational performance of each AFI on a daily basis. Non-performance or delays on the part of APS banks are reported, evaluated and discussed. Concerns about the creditworthiness or operational support can lead to exclusion of the APS bank.

ICEU holds regular APS forums, where each APS bank is expected to be in attendance. The agenda and relevant papers are circulated in advance, with minutes taken and subsequently circulated to each APS participant. A standing agenda item is the performance of the APS against the Payment Service Agreement criteria. APS wide issues will be discussed at the Forum.

To guard against an intraday failure of a commercial bank, which might affect the payment flows between the Clearing House and Clearing Members, ICEU's Clearing Rules make clear that a Clearing Member will continue to be liable for any amount due under the ICEU Clearing Rules and no payment obligation of a Clearing Member shall be treated as having been satisfied or discharged unless and until relevant funds are received on the Clearing House concentration account.

ICEU seeks to limit credit exposure posed by commercial bank activities by minimising the transfer window between the time funds are received from Clearing Members on the APS account and the time funds are transferred to the investment agents via the concentration account. Overnight exposures to commercial banks are monitored in line with the unsecured credit limits.

ICEU has also established investment agent contingency plans (Roadmaps) in the event that one of the service providers should cease to provide custody and related services. See Principle 16 for more information.

ICEU's APS network consists of a network of 11 banks. The banks that currently participate in the APS (collectively "APS Banks") can be found in the 'Treasury and Banking' section of the ICEU website: https://www.theice.com/clear-europe/treasury-and-banking

The CRD conducts daily financial monitoring and control on the Approved Financial Institutions in accordance with the ICEU Counterparty Rating Policy

The objective of stress and scenario testing is to assess the capability of ICEU not just to cover the potential liquidity needs using scenarios required by the various regulatory authorities, but also those caused by extreme but plausible scenarios related to the liquidity available to ICEU.

Various stress test scenarios have been defined, including the failure of ICEU's largest settlement bank. Liquidity Stress Testing has default scenarios to assess the stresses from outsourcing its investment activities.

| **Key Consideration 4** | **If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.** |
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Variation Margin (VM), deliveries, fees and interest are settled on ICEU's books. Debit balances or uncovered initial margin liabilities will generate a cash call which is subject to settlement finality as per the Clearing Member rules.

The Payment Services Agreements between ICEU and the APS Banks state that fund transfers are final when effected and that confirmations are irrevocable.

For intraday instructions, as per the service agreement, the APS banks are able to execute and confirm (via Swift MT910) within 1 hour of the time of receipt of the instruction to make payment of the amount specified.

Responsibility for fulfilment of the payment obligation remains with the Clearing Member, until the funds are received on the concentration account.

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| **Key Consideration 5** | **An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.** |

The Payment Services Agreements between ICEU and the APS Banks state that fund transfers are final and irrevocable once an MT910 SWIFT message has been given by the payment bank.

Intraday finality is supported; once sent, the payment instruction is effective once the confirmation is received. The transaction is final and cannot be reversed.

The Payment Services Agreements between ICEU and the APS Banks state that fund transfers are final and irrevocable once an MT910 SWIFT message has been given by the payment bank.

Intraday finality is supported; once sent, the payment instruction is effective once the confirmation is received. The transaction is final and cannot be reversed.

ICEU monitors all APS accounts from a return point of view. Cash is moved as soon as possible from the APS accounts into the concentration banks. The investment programme has concentration guidelines which control the settlement bank risk failure. This process also helps to mitigate risk at the APS banks as cash is only held in APS accounts for a short time before the cash is transferred to the concentration banks.

The Payment Services Agreement and the CMA stipulate that payments are effected and confirmed by SWIFT message and following receipt of relevant SWIFT confirmation, become irrevocable. Payments are made by Clearing Members, consistent with the ICEU Rules, to satisfy contractual obligations in respect of margin and Guaranty Fund payments.

Calls are made from Clearing Member Bank Accounts for funds at close of relevant clearing runs in the early hours of the day following the relevant business (which has led to a call arising) being completed. Payments will be made by 09.00am (London time) the same value day (Euro, GBP, USD and CAD) the other 10 currencies (, CHF, SEK, JPY, NOK, DKK, HUF, CZK, PLN, ZAR, AUD) will settle T+1, the day subsequent. Intraday margin calls must be completed within one hour the same value date.

## 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.**

| Key Consideration 1 | An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities. |
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All asset classes accepted by ICEU for physical delivery are defined within the publicly available Delivery Procedures: https://www.theice.com/publicdocs/clear_europe/rulebooks/procedures/Delivery_Procedures.pdf

ICEU's obligations (and those of its Clearing Members) in relation to physical deliveries are clearly stated in Part 7 of the ICEU Clearing Rules and in the Delivery Procedures, as well as in the relevant exchange rules.

ICEU Clearing Rules and Procedures are publicly available on the ICEU website.

ICEU and Clearing Members are contractually bound to comply with ICEU's Clearing Rules and Delivery Procedures pursuant to a Clearing Membership Agreement ("CMA") that is executed by ICEU and each Clearing Member prior to such Clearing Member commencing clearing activities with ICEU.

| Key Consideration 2 | An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities. |
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Operational risks associated with storage and delivery are identified and monitored through operational risk monitoring and self-assessment (governed by the Operational Risk and Resilience Policy) - see Principle 17 for more information.

The ICEU Operations department is responsible for managing the settlement and delivery process from exercise / expiry to completion. Senior Analysts, plus the associated Managers and Director, are responsible for the following:

- Reporting to the Head of Operations;
- Monitoring participants;
- Monitoring deliveries;
- Partial delivery processing;
- Fails processing and Compliance reporting;
- Maintaining CSD account details;
- Maintaining liquidity arrangements;
- Managing buying-in process;
- Arranging payments for buying-in process;
- Running the tender allocation process;
- Updating deliverable Bond lists in the Clearing Console;
- Liaison with the relevant exchange in advance of delivery windows to discuss relevant transactions that are subject to clearing; and

- Liaison with relevant Clearing Members holding positions approaching futures expiry.

The ICEU Operations team is responsible for supervising the settlement agent's function, performance and activities.

Settlement agents facilitate the physical settlement of each delivery (e.g. equities, Bonds and Energy products) by providing key services, which includes:

- The management of all settlements on the settlement date; and
- The management of any partial settlements or failures.

The settlement agent also provides services specifically in relation to equity and Bond settlements, including:

- The provision of liquidity facilities (caps) to guarantee cash flows at the CSD;
- The management of corporate actions; and
- Interface to all required CSDs.

Where relevant, the appropriate CSD facilitates the completion of the settlement process and reports back, via the settlement agent, details of all successfully settled delivery transactions plus, any total or partial failures.

Where buyers and sellers need to be paired, the matching delivery arrangements are documented in the publicly available Delivery Procedures.

Wherever possible deliveries will be made through a DvP mechanism. Where this is not possible, ICEU will always debit the buyer (via a buyer security or an invoice) before the delivery takes place. It will also only credit the seller (via an account sale) once the delivery has taken place and ICEU is able to confirm it. Buyer security and account sales are calculated by reference to the relevant Market Delivery Settlement Price ("MDSP").

The Delivery Procedures define deadlines and requirements for delivery preferences. Clearing Members have a deadline for submitting delivery preferences, and where received, those preferences are taken into consideration by the delivery matching algorithm.

In the days and hours leading to a contract expiry, Operations staff will monitor open positions and will endeavour to contact Clearing Members which are known not to have the systems and/or resources to effect settlement, so that they can be encouraged to take appropriate actions. If a Clearing Member does hold to expiry a position in a contract that they are unable to physically deliver, mechanisms in the ICEU Clearing Rules (ADP or Invoicing Back) or in ICEU's Procedures (use of a default broker) will allow ICEU to manage the situation to a satisfactory conclusion.

## 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.**

| Key Consideration 1 | An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs. |
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The ICEU Clearing Rules provide the legal basis for final settlement of relevant financial instruments, which together with ICEU's risk management arrangements, eliminate principal risk to ICEU.

Where a Futures expiry results in a physical delivery, ICEU will always debit the buyer for the value of the goods to be delivered before the delivery takes place. Options will be cash settled or expire into a futures contract. Conversely the sellers will only be credited once ICEU has established unequivocally that the delivery has taken place. This is described in further detail in the assessment of how ICEU meets Principle 10. This method will apply in any situation where DVP is not available. DvP is a settlement method that guarantees the transfer of securities occurs only after payment has been confirmed, or simultaneously, but not before. DvP is typically performed by Central Securities Depositories ("CSDs") where cash and custody accounts co-exist to support the simultaneous exchange of securities and cash. It differs from typical energy market physical delivery methods, where payment is confirmed in advance of the transfer of goods, or title to goods, as simultaneous exchange is not possible.

Where DvP is available, ICEU will always use this method when settling deliveries. This is currently the method used for the settlement of equity or bond transactions resulting from the exercise of Options or the expiry of Futures for ICE Futures Europe equity or bond products. DvP is supported by the CSDs on all the markets on which ICEU operates. If the instructions are matched and DvP was the chosen method, either both legs of the transaction will settle simultaneously or neither will settle.

## 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.**

| Key Consideration 1 | An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default. |
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Rule 901 of the ICEU Clearing Rules details the events which may, if so declared by the Clearing House, constitute an "Event of Default", including financial defaults and operational defaults.

A full list of such events is set out in Rule 901. It is noted that Financial Defaults include a Monetary Default (which includes failure by a Clearing Member or Sponsored Principal to pay to the Clearing House any Margin, Guaranty Fund Contribution or any amounts due to the Clearing House or required under Market Rules), Financial Indebtedness (which includes any indebtedness for amounts borrowed, raised under any acceptance credit facility, note purchase facility or amounts raised under any other transaction), and an Insolvency or Unprotected Resolution Step (in relation to a Clearing Member or any of its Group Companies).

Operational defaults include Delivery Defaults i.e. failing to deliver or transfer to the Clearing House any Deliverable.

Part 9 and Part 11 of the ICEU Clearing Rules address the identified key aspects of a Clearing Member default through the following rules:

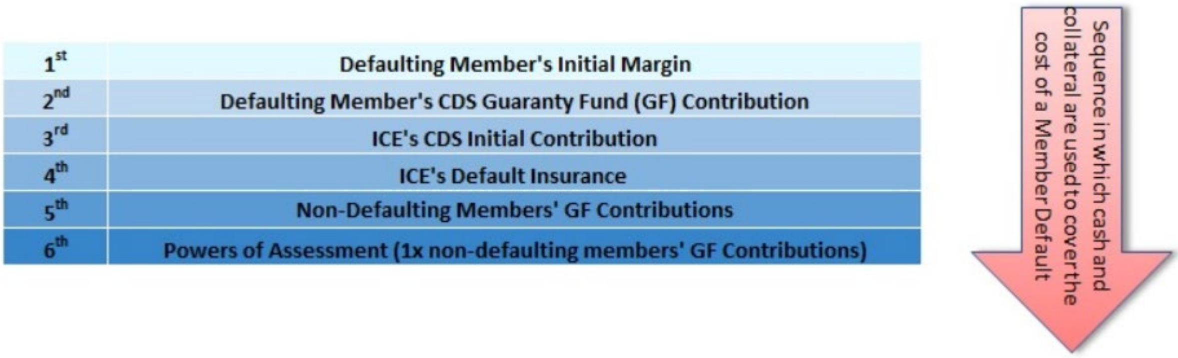
- Actions to be taken following the declaration of a Clearing Member Event of Default (Rule 902);
- Treatment of Contracts following a Clearing Member Event of Default and Hedging (Rule 903);
- Transfer of Contracts and Margin on a Clearing Member Event of Default (Rule 904);
- Termination and close out of Contracts on a Clearing Member Event of Default (Rule 905);
- Net Sums Payable (Rule 906);
- Administrative matters concerning an Event of Default (Rule 907);
- Application of assets upon an Event of Default (Rule 908);
- Powers of Assessment (Rule 909);
- Default procedure for certain termination events (Rule 912);
- Reduced Gains Distribution (Rule 914);
- Partial Tear-Up (Rule 915)
- Contract Termination following Certain Conditions or Under-priced Auction (Rule 916);
- Cooling-off Period and Clearing Member termination rights (Rule 917);
- Termination of membership (Rule 918);
- Non-Default Losses and Investment Losses (Rule 919);
- Establishment and parameters of the Guaranty Funds (Rule 1101);
- Clearing Members' Contributions (Rule 1102); and
- Use of Guaranty Fund Contributions (Rule 1103).

Rule 908 of the ICEU Clearing Rules sets out how, and the order in which, ICEU may make use of available financial resources (e.g. Guaranty Fund Contributions and Clearing House Contributions, among other resources) that it maintains for covering financial losses and containing liquidity pressures arising from default.

In addition, the following elements help to ensure ICEU’s rules and procedures will enable the prompt use of financial resources:

- ICEU has documented its approach to handling a Clearing Member default in its CDS and F&O Default Management Policies and Procedures;
- ICEU's liquidity risk management framework (comprised of the Liquidity and Investment Management Policy, the Liquidity Management Procedures and the Investment Management Procedures) describes ICEU's sources and management of its Liquid resources. ICEU investment management procedure includes a regular monitoring of assets, currencies and counterparty concentration in its investment portfolio.
- ICEU's Recovery Plan describes the use of certain recovery tools and options, including without limitation the following (which are mainly set out in the ICEU Clearing Rules): Powers of Assessment; balancing of defaulting Clearing Member’s portfolio; Variation Margin haircutting (Reduced Gains Distribution); replenishment; contract tear up (Partial Tear-Ups);
- ICEU obtains opinions from external legal counsel on the enforceability of its Clearing Rules in the UK and all jurisdictions in which it has Clearing Members, which confirms the legal basis on which ICEU can use the collateral it holds.

Rule 908 of the ICEU Clearing Rules set out the order in which financial resources can be used, broadly summarized for F&O and CDS respectively as follows.

Clearing Members are required by Rule 1102 to make additional Guaranty Fund Contributions on demand in order to replenish relevant Guaranty Funds.

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| **Key Consideration 2** | **An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.** |

ICEU has an F&O Default Management Policy and CDS Default Management Policy and supporting F&O and CDS Default Management Procedures (the "Policies") which set out specific responsibilities with the regards to the default provisions specified in the ICEU Clearing Rules. The Policies outline the actions ICEU's Senior Management will carry out in the event of a default.

The Policies maintain a measure of flexibility as they are intended to provide a structure and guidance to management. They are not designed to be prescriptive and recognise that, depending on the nature and circumstances of the default, the way in which each default is managed may differ.

The Policies set out clear roles and responsibilities when addressing a Clearing Member default. Prior to the declaration of a default, where possible, ICEU will work with the senior management of the Clearing Member experiencing difficulties, and with other clearing houses and advisers to the Clearing Member, to seek solutions to the issue and avoid action under ICEU's default rules.

In the event that it is necessary to declare an Event of Default, the President has authority (via Board delegation) to make this declaration. ICEU will usually liaise with the President or CFO of the Clearing Member, their regulator and the Bank of England and its other regulators, as relevant and appropriate, prior to the declaration of an Event of Default. ICEU is responsible for notifying non-defaulting Clearing Members and the relevant ICE Exchange(s) and for publishing relevant notices on its website.

While the President has authority (via Board delegation) to manage an Event of Default, he or she may, at his or her sole discretion, choose to consult the Default Management Committee which may convene on a daily basis (and more frequently as required) throughout the default management process. The Default Management Committee will consist of specified key personnel.

ICEU tests and reviews its default procedures at least quarterly, including a full annual review of the F&O and CDS Default Management Policies presented to the Executive Risk Committee. Simulation exercises ("Default Test") are also performed at least annually, with results discussed at executive and board committees. For further details please see 13.4.

ICEU also maintains a multi-year default management testing plan covering a variety of scenarios, including end-of-day defaults; defaulting clearing member's affiliates; simulated liquidations of a material value of customer accounts; and the impact of multiple clearing member defaults occurring over multiple days. The purpose of such plan is to provide transparency about the scenarios considered in the default test to Senior Management and the Board.

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| **Key Consideration 3** | **An FMI should publicly disclose key aspects of its default rules and procedures.** |

ICEU's default rules are set out at Part 9 of its Clearing Rules and are publicly available at: https://www.theice.com/publicdocs/clear_europe/rulebooks/rules/Clearing_Rules.pdf

Please refer to the response provided to question 13.1.2 for the details of the headings of the rules of Part 9 of the ICEU Clearing Rules which cover (a) – (e).

The ICEU risk management website contains descriptions of key aspects of ICEU's default arrangements: https://www.theice.com/clear-europe/risk-management

Additionally, ICEU's Auction Terms for CDS Default Auctions, F&O Default Auctions and FX Default Auctions, each of which form part of ICEU's Clearing Rules as "Procedures", are available at: https://www.theice.com/clear-europe/regulation

In addition, ICEU publishes on its website an EMIR Disclosure Statement (available at: https://www.theice.com/publicdocs/clear_europe/ICEU_EMIR_Disclosure_Statement.pdf), which discloses, among other things, the different risks arising from different means of segregation of assets and accounts.

| **Key Consideration 4** | **An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.** |
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The Default Management Policies are reviewed annually by the relevant Risk Committee(s).

The annual Clearing Member Default test (each a "Default Test") is run in a combined way for F&O and CDS. The exercise involves the Clearing Risk department and appropriate ICEU staff and includes an assessment of the following:

- ICEU Risk, Treasury and Operations team responsibilities;
- Trading facilities, including equipment and systems, e.g. Default Management System;
- Broker awareness of their responsibilities in the event of ICEU implementing its default procedures, including confirming that broker accounts are open and available for trading;
- CDS Default Committee members' awareness of their responsibilities;
- Relevance and content of the CDS and F&O Default Management Policies;
- Clearing Members' obligation to participate, when required, in the defaulter's portfolio(s) liquidation process by bidding for each lot in accordance with any Minimum Bid Requirement determined by ICEU in any Default Auction, in accordance with the Auction Terms for both F&O and CDS Default Auctions.

The timing of a Default Test may be altered at times of market stress to help ensure default procedures are current should a default occur.

## 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.***

| **Key Consideration 1** | **A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.** |
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ICEU's client segregation and portability rules and clearing procedures are designed to provide the framework whereby ICEU and its Clearing Members meet their regulatory requirements in the relevant jurisdiction, including the obligation to provide clients with a choice between "omnibus client segregation" and "individual client segregation" under EMIR, indirect clearing accounts under EMIR and UK MiFID II and EU MiFID II and accounts to meet the requirements of Section 4d(a), (b) and (f) of the U.S. Commodity Exchange Act. Depending on the relevant regime, and on the election made by the customer, these accounts facilitate the portability of assets and positions of clients to a non-defaulting Clearing Member in different ways. The general account structure segregates customers' positions and related collateral 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 the customer elects to enter into with the Clearing Member and which of the position accounts is used by the Clearing Member to hold that customer's business.

The Clearing House also regularly receives CASS letters from its Clearing Members, which is another way that ICEU is made aware of the presence of client money. CASS letters give both ICEU and its Clearing Member an opportunity to document that such money is designated as client money in the required way and segregated and held in the appropriate type of account, as required by the Clearing Member and/or their customer(s).

For further details on the types of customer segregation model and the level of protection given please refer to 14.2.1.

If the Clearing Member in default has customer-related positions, ICEU will, depending on the prevailing situation and pursuant to Part 9 of the ICEU Clearing Rules, seek, but not guarantee, to facilitate the transfer of customers' positions to another solvent Clearing Member, subject to agreement by the porting Clearing Member and receiving Clearing Member.

For the avoidance of doubt, the Clearing House has no obligation to enter into or effect any transfer if to do so would result in the Clearing House being under-collateralised with respect to any remaining contracts or would raise other risk management concerns, in each case as determined by the Clearing House at its discretion (Rule 904(c)). In the event that the Clearing House is unable to transfer all positions on the defaulter's customer accounts to another non-defaulting Clearing Member, the positions will be liquidated via auction or directly via bilateral trades between the Clearing House and non-defaulting Clearing Members. Customer and Proprietary account trades, where auctioned or liquidated, will generally be executed separately so as to maintain a separate audit trail for customer and defaulter accounts. However, cross-account tear-ups at market price may be undertaken.

Further details on the accounts ICEU offers can be found at the ICEU EMIR Disclosure Statement, here: https://www.theice.com/publicdocs/clear_europe/ICEU_EMIR_Disclosure_Statement.pdf.

As stated also in the ICEU EMIR Disclosure Statement, the insolvency of an FCM/BD Clearing Member may, depending on the circumstances, be governed by one or more of (i) Subchapter IV of Chapter 7 of the U.S. Bankruptcy Code (the "Commodity Broker Liquidation Provisions"), (ii) the insolvency regime of the Securities Investor Protection Act of 1970 ("SIPA"), or (iii) the orderly liquidation authority under Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "OLA"). In any such proceeding, a trustee or receiver will be appointed to administer the assets of the failed FCM/BD Clearing Member. With respect to positions carried in a DCM Customer Account, Swap Customer Account or Non-DCM/Swap Customer Account, it is expected that the insolvency trustee or receiver will attempt to arrange with the Clearing House the porting of such positions and related Margin to a Transferee Clearing Member, in accordance with Applicable Law. As discussed above, however, there can be no assurance that such porting will take place. In certain circumstances, such as where there is a shortfall in Margin assets in the relevant account, it may be difficult or impossible to arrange such porting. Positions that are not ported would be liquidated.

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| **Key Consideration 2** | **A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.** |

ICEU offers various forms of segregation and portability to clients of participants. Further details on the accounts ICEU offers can be found within section 3 of the ICEU EMIR Disclosure Statement, here: https://www.theice.com/publicdocs/clear_europe/ICEU_EMIR_Disclosure_Statement.pdf.

Collateral in custody designed to cover clients' exposure is required primarily as Initial Margin, as well as potentially certain additional Margin requirements *such as 'concentration risk charge'*. However, when cash excess exists, these can be directed to cover future Variation Margin.

Other than for individually segregated accounts, Clearing Members are required under the ICEU Clearing Rules to provide accurate records relating to individual customers to ICEU (Rule 202(a)(xvii)). For individually segregated accounts, ICEU maintains its own records of relevant customers' positions and Margin requirements.

The extent to which a customer's collateral is exposed to "fellow customer risk" depends on the account type the customer has opted for (such as omnibus or individual segregation).

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| **Key Consideration 3** | **A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.** |

ICEU has taken legal advice to ensure enforceability of its Clearing Rules and Procedures in all Clearing Member jurisdictions, which includes advice on the enforceability of its portability arrangements. In addition, ICEU maintains a set of internal operational procedures which ensure a smooth operational process in the case of porting the positions and collateral of a defaulting Clearing member's customers to one or more other Clearing Members.

As set out in the ICEU Clearing Rules (in particular Rule 1604 in respect of FCM/BD Clearing Members) and the Standard Terms, in the Event of a Default, there will be a minimum period as set out in the Default Circular (declaring the default and naming the defaulting Clearing Member) for Customers and their Transferee Clearing Members to notify the Clearing House of their agreement that Contracts and/or Margin can be Transferred to a Transferee Clearing Member pursuant to the Rule

904. The Default Circular includes a link to the "Porting Notice" (https://www.theice.com/publicdocs/clear_europe/ICEU_Default_Porting_Notice.pdf), which is the ICEU standard form by which Clearing Members notify ICEU of their desired porting arrangements. A Porting Notice must be received by the Clearing House within 4 hours of the Default Notice being published in order to be assured of being acted upon (subject to certain limitations outlined in the ICEU Clearing Rules). Any Porting Notice, in order to be valid, must meet certain conditions, e.g. be in writing and be duly authorised and executed by a Customer and Transferee Clearing Member who are not Defaulters.

As stated above and in the ICEU EMIR Disclosure Statement, the insolvency of an FCM/BD Clearing Member may, depending on the circumstances, be governed by one or more of (i) Subchapter IV of Chapter 7 of the U.S. Bankruptcy Code (the "Commodity Broker Liquidation Provisions"), (ii) the insolvency regime of the Securities Investor Protection Act of 1970 ("SIPA"), or (iii) the orderly liquidation authority under Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "OLA"). In any such proceeding, a trustee or receiver will be appointed to administer the assets of the failed FCM/BD Clearing Member. With respect to positions carried in a DCM Customer Account, Swap Customer Account or Non-DCM/Swap Customer Account, it is expected that the insolvency trustee or receiver will attempt to arrange with the Clearing House the porting of such positions and related Margin to a Transferee Clearing Member, in accordance with Applicable Law. As discussed above, however, there can be no assurance that such porting will take place. In certain circumstances, such as where there is a shortfall in Margin assets in the relevant account, it may be difficult or impossible to arrange such porting. The decision as to whether to port also belongs to the US insolvency practitioner/ trustee as appropriate. Positions that are not ported would be liquidated.

| **Key Consideration 4** | **A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.** |
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The rules and procedures of ICEU (including those relating to segregation and portability) are publicly available. The rules and procedures clarify whether a participant's customer's collateral is protected on an individual or omnibus basis depending on the segregated clearing model elected by the participant's customer.

Additional information on the customer segregation is set out in the Disclosure Statement pursuant to Article 39(7) of EMIR (link below):

https://www.theice.com/publicdocs/clear_europe/ICEU_EMIR_Disclosure_Statement.pdf

The Porting Notice is available on the ICE website via this link: https://www.theice.com/clear-europe/client-clearing.

ICEU has publicly disclosed the levels of protection and the costs associated with the different levels of protection and the costs associated with the different levels of segregation.

Information on customer segregation is set out in the Disclosure Statement pursuant to Article 39(7) of EMIR.

## 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.**

| Key Consideration 1 | An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses. |
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The Clearing House identifies business risks via the following assessment methods:

- Enterprise Risk Register Annual Assessment: This includes business risk considerations to identify, assess and mitigate risk of a failure to deliver competitive and cost-effective clearing services or meet stakeholder needs.
- Emerging Business Risks: Its purpose is to identify, assess and respond to significant emerging risks.
- Business Risk Scenarios: Scenario analysis is performed as part of the capital adequacy process. Business risk scenarios are developed each year (focused on macro business risks rather than specific legal or operational type risks), in line with ICEU's risk identification and emerging risk processes. Scenarios that are deemed plausible are modelled based on the current year budget. The annual process is conducted in conformance with Article 5 of EMIR RTS.

As part of wider risk management processes, ICEU has established a number of mechanisms to monitor and manage its business risks and ensure that its capital is adequate to cover losses which may arise from an identified business risk that materializes and does not form part of the covered activities (i.e. default losses under the default waterfall). Furthermore, ongoing risk assessment of general business risk is monitored and reported through the ICEU Risk Register, ICEU Emerging Business risks process and Business Risk Scenarios (as described in 15.1.1).

On an ongoing basis, ICEU ensures that it has sufficient liquid financial resources to meet its ongoing payment obligations. Financial resources held for capital adequacy purposes are held in highly liquid form in accordance with the Investment Management Procedures. These financial resources are held separate and distinct from the financial resources ICEU uses to meet its ongoing payment obligations. The Liquidity Risk Management Framework requires ICEU to hold sufficient highly liquid assets that would be sufficient to satisfy payment obligations based upon extreme but plausible liquidity stress scenarios.

The Investment Management Procedures set out the permitted investments and related concentration limits for ICEU when investing or securing cash received from Clearing Members (e.g. as guaranty fund contributions, Initial Margin or other types of Margin) or when investing or securing ICEU's contributions to the Guaranty Fund (skin in the game) and ICEU's regulatory capital which, by virtue of the applicable EMIR requirements, contain constraints in respect of exposure to market risk and credit risk that ensures the investments or accepted collateral are of a high credit and liquid nature.

In addition to the risk assessments already mentioned, ICEU accounting policies and financial statements have been prepared in accordance with applicable law and United Kingdom Accounting Standards including Financial Reporting Standard 102. The financial statements are also prepared and reported under US GAAP principles given ICEU's ultimate parent and also due to the SEC regulation of ICEU's CDS clearing activities.

| **Key Consideration 2** | **An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.** |
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ICEU's capital resources funded by its liquid net assets as required by its EMIR regulatory capital requirements include issued and fully paid ordinary share capital, retained earnings and reserves of ICEU (including, if any, independently reviewed interim profits and excluding ICEU's pre-funded and ring-fenced contribution to the Guaranty Fund).

The Clearing House believes the EMIR regulatory capital requirements are expansive and comprehensive, and compliance with these regulatory capital standards is a priority for the Clearing House. ICEU therefore maintains capital resources in excess of its capital resources requirements. The Clearing House faces daily risks that cannot be reasonably quantified or forecast but which may impact the capital held to meet the capital requirements under EMIR and has therefore allocated additional capital and resources as a voluntary buffer in excess of the EMIR capital requirements.

The EMIR requirements include capital elements for Business risks and Operational and Legal risks, which are set at minimum levels based on financial activity of the Clearing House and are reviewed against the outcomes of extreme but plausible business risk scenarios (refer to 15.1.1.) assessed as part of the Clearing House's ongoing risk and capital management.

All capital requirement calculations are consistent with the requirements set out in EMIR.

| **Key Consideration 3** | **An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.** |
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ICEU has developed separate Recovery and Wind-down plans.

ICEU's Recovery Plan includes the triggers for recovery and the tools and options available to ICEU in order to cover losses beyond ICEU's pre-funded resources and return ICEU to normal operations.

ICEU's Recovery Plan covers both default losses and non-default losses.

ICEU's Wind Down Plan is described in detail in the Wind Down Framework and Plan ("WDFP"). Under the WDFP the following events triggering a wind down are considered:

- ICEU's Recovery Plan has failed to cover its losses and it cannot remain viable as a going concern; or
- ICEU decides for business reasons that it no longer wishes to operate as a CCP in its chosen markets, and therefore may need to conduct an orderly wind down of its business.

These resources are clearly and separately identified within ICEU's systems and are invested/secured separately to other resources.

The resources designated to cover business risks, inclusive of the amount required to cover a wind down, operational and legal risk and credit, counterparty credit and market risk are separate from, and in addition to, the resources ICEU has committed to cover participant default or other risks covered under the financial resource principles (the own resources contribution to the default waterfall). The liquid net assets required to be held funded by these resources are invested in accordance with the Investment Management Policy, which forms part of the risk management framework. This policy is designed to minimise ICEU's exposure to potential loss of principle arising from credit or market risk. In compliance with EMIR, liquid financial resources are typically held in highly liquid government securities.

The Clearing House calculates and holds regulatory capital as set out by EMIR regulatory capital requirements. The EMIR requirements include capital elements for Business risks and Operational and Legal risks,

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| **Key Consideration 4** | **Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.** |

Under the Liquidity and Investment Management Policy, financial resources/liquid net assets held to cover general business risk are invested in highly liquid financial instruments with minimal credit and market risk capable of being liquidated rapidly with minimum adverse price effect.

Liquid net assets held to cover capital requirements are invested in highly liquid financial instruments with minimal credit and market risk capable of being liquidated rapidly with minimum adverse price effect. ICEU holds investments in sovereign obligations with time to maturity not exceeding 90 days.

ICEU regularly assesses the quality and liquidity of its liquid net assets funded by equity in the following ways:

- Daily monitoring that assets have been invested according to the Liquidity and Investment Management Policy and are therefore of the right quality and liquidity;
- A buffer is included in the capital requirements to protect against adverse market conditions; and
- Capital requirements include extreme but plausible changes to operating expenses.

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| **Key Consideration 5** | **An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.** |

ICEU has developed a Capital Replenishment Framework to raise additional equity which has been approved by the Board of Directors.

They main features of the Capital Replenishment Framework are:

- Options for replenishing capital before additional equity is needed
- Raising equity from ICEU's parent company
- Raising equity from other third parties

The framework includes the governance and decision-making processes associated with raising additional capital or equity.

## 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.**

| Key Consideration 1 | An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets. |
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Custodians are selected according to specified criteria, including Service Competency, Regulatory Compliance, Domicile, Derivatives Clearing Expertise and Strategic Relationships. Custodians may also be approved as Financial Services Providers by the ICEU Credit Risk team, in line with the applicable ICEU credit risk management procedures. These providers are subject to regular due diligence review.

Based on ICEU's due diligence, service providers are understood to have robust accounting practices, safekeeping procedures, and internal controls that ensure the full segregation and protection of financial instruments and enable ICEU to have prompt access to those instruments when required. These entities are classified as Financial Service Providers (FSPs) and are covered under strict eligibility requirements including credit worthiness based on their accounting disclosures.

| Key Consideration 2 | An FMI should have prompt access to its assets and the assets provided by participants, when required. |
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Where possible, ICEU operates accounts in its name with the CSD, ICSD and/or SSS, as described above. Financial instruments posted as Margin, default fund contributions or other financial resources are received by ICEU with full title or (in the case of US FCMs) pledged. For USD denominated financial instruments, due to regulatory constraints, the accounts are designated as ICEU owned assets via custodian banks.

ICEU has global legal agreements with custodians which confirm the enforceability of its interest in collateral held.

ICEU has the right to access the financial instruments through issuing instructions for the movement of assets held by custodians on demand in accordance with relevant market settlement deadlines and tests these arrangements annually.

ICEU has received legal advice confirming that financial instruments deposited at credit institutions are protected under the relevant jurisdictions and that the ICEU Clearing Rules protect ICEU in insolvency proceedings from any losses.

| Key Consideration 3 | An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each. |
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ICEU uses multiple CSD/ICSDs and custodian banks, diversifying where collateral is held. In addition to a UK CSD, ICEU utilises two major ICSDs, and two USD custodians.

| Key Consideration 4 | **An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.** |
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| Information on customer segregation is set out in the Disclosure Statement pursuant to Article 39(7) of EMIR. | |

## 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.**

| Key Consideration 1 | An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks. |
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ICEU's operational risk and resilience process is designed to ensure that operational risks are identified, assessed, monitored, responded to and reported in a consistent manner. The output of this process includes top-down evaluations linking to ICEU's business objectives and bottom-up operational risk assessments.

Overall responsibility for oversight and facilitation of the operational risk and resilience management framework belongs to the Risk Oversight Department ("ROD"). It is maintained by the ROD and overseen by the ERC, which meets periodically.

Operational risk is an event occurring due to inadequate or failed internal operational controls, people, systems or external events which if not contained or left untreated could give rise to increased risk exposure, reputational damage or regulatory fines.

Sources of operational risk include:

i. Failure to maintain adequate resources and failure to safeguard resources.
ii. Failure to comply with regulatory requirements, implement effective contracts and legal agreements and maintain appropriate employment practices.
iii. Failure to design, implement and monitor clearing operations and processes.
iv. Failure to secure CCP data, systems and premises.
v. Failure to design and operate clearing technology services reliably.
vi. Failure to deliver competitive and cost effective clearing services or meet stakeholder needs.

ICEU has identified the following single points of failures (i.e. if a system/service/process fails to work correctly, it may lead to the failure of the entire system):

- Technology systems and service providers - ICEU relies on a number of proprietary systems (e.g. front end trade registration/management and clearing systems, collateral and custody management systems, clearing risk systems) to undertake its core business operations. Majority of these systems are provided by other ICE entities such as ICE and ICC ICEU has put in place Master Outsourcing Agreements outlining scope of services and level of services expected to ensure systems and service continuity is maintained to an acceptable level.
- External Financial service providers - ICEU is dependent upon the continuing operations of a number of financial institutions, including the following: the exchanges that provide settlement prices upon which ICEU and Clearing Members are dependent; the providers of messaging services such as SWIFT; CSDs such as Euroclear and Clearstream,

where collateral is held[1]; and the payment and settlement systems operated by central banks and/or commercial banks for the settling of respective currencies.

In the event systems or providers become unavailable, unreliable, or inaccessible (due to technology outages, security breaches, data corruption/loss) leading to an operational failure, ICEU has put in place contingency plans to minimise the impact on core operations. These include the following:

- Disaster Recovery and Business Continuity Framework – See Principle 17, Key Consideration 6
- Business Continuity and Disaster Recovery Plans

<u>Risk Monitoring and Reporting</u>

The top-down risk analysis and bottom-up operational risk register are subject to an annual review in order to ensure that they remain fit for purpose, up to date and incorporate all key vs non-key control assessments and expanded risk data considerations.

Dynamic risk assessments are performed to reflect material operational risk changes - e.g. due to Operational Risk Incidents, Regulatory Findings, ORSA Assessments, Control Assessments etc. These are approved by the ERC and presented to the BRC on an ad-hoc dynamic basis in addition to the one-off annual reviews performed on a rolling quarterly review process.

ORSA test results are overseen by ROD and reported to the BRC and ERC.

Material operational incidents are reported to the BRC on a routine basis with additional text and analysis for priority 3, 2 and 1 incidents. 2LOD 'Operational Incident Reviews' completed on material Severity 3 incidents or higher.

Operational procedures are maintained by each business department. department Heads are responsible for ensuring that internal procedures remain up-to-date and relevant and are formally reviewed at least once per year. The review process includes checks designed to assess the implementation of the procedures.

All ICEU department Heads are responsible for ensuring that their staff members have an awareness of operational risk and the relevant policies and procedures. They also ensure that staff members are trained in specific responsibilities set out in the procedures.

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| **Key Consideration 2** | **An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.** |

The ICEU Board assumes final responsibility and accountability for managing ICEU's risks. The Board defines, determines and documents its risk tolerance via risk appetite statements and monitors adherence via the Risk Appetite Metrics (RAM).

The Board and Senior Management ensure that ICEU's policies, procedures and controls are consistent with the Board's risk appetite. Day-to-day management of risk is the responsibility of all staff and the identification and management of risks requires active engagement and involvement of staff at all levels.

The ERC and the BRC Committee advises the Board in regard to operational risk matters.

[1] Euroclear and Clearstream form part of the market infrastructure and are highly regulated. In the event of a failure of their operations, ICEU Rules stipulate that the Clearing House can postpone its payment and withdrawal obligations.

Roles and responsibilities in relation to operational risk are defined within the Risk Identification Framework, Risk Appetite Framework and corresponding terms of references of the Audit Committee, the Board Risk Committee, the ERC, and the Model Oversight Committee.

The Board has adopted a 'Three Lines of Defence' model.

| Key Consideration 3 | An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives. |
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The objective of ICEU is to provide a safe and efficient clearing service. The operational reliability objectives of ICEU's systems and processes are set out in the Risk Appetite Framework, which provides quantitative and qualitative definitions of risk appetite and tolerance covering core services provided by ICEU.

Policies, procedures and systems are in place for ICEU to meet these objectives and ensure a high degree of operational reliability. This includes, for example, the timely reporting of performance indicators against these objectives.

| Key Consideration 4 | An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives. |
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ICEU puts performance testing at the core of its systems engineering and design. ICE IT Operations team (based in Atlanta) oversee capacity management, database administration, server management, IT asset management (including software licensing). They are responsible for monitoring applications and servers at ICEU with respect to system performance, capacity to ensure volume and operational requirements are met. All production, customer-facing, and ICEU back office servers are actively monitored as part of ICE Operational Procedures.

ICE has a dedicated performance testing team (within IT Operations) that uses automated tools to simulate multiple times production loads, i.e. stressing production systems to cope with multiples of peak daily volume. In addition, the Research and Development team continually evaluate the performance (and maturity) of the next generation of hardware available.

ICEU's performance testing ensures that it has the capacity to process at least twice the largest historical peak volume or load. When a new historical peak occurs, ICEU retests to ensure that its capacity remains at least twice the new peak.

Different tools are used to capture and report performance across all ICEU systems using a dedicated performance database. This 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. The reports include trend analysis based on historical data on top of new product growth expectation and are provided to the COO.

| Key Consideration 5 | An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats. |
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ICE Enterprise Risk Management team in coordination with ICEU Risk Oversight department conducts Physical Security ETRAs (Enterprise Technology Risk Assessment), which on annual basis assesses physical security and data centre environmental risk events, and reviews controls relevant to those risks.

ICEU has adopted the parent company's (ICE) IT Risk Management and Information security programmes which includes IT security risk assessments, the Cyber Security Strategy Information Security Policy and Procedures, Threat and Vulnerability Testing Regimes, and Physical and Environmental Controls Policy and Procedures.

ICEU operates within the ICE's Corporate Information Security Policy and Physical Security Policy covering physical and information security. The policies cover all information environments operated by ICEU or contracted with a third party by ICEU. ICEU protects its information resources through implementation of sound physical, environmental, and administrative security controls designed to reduce the risk of physical failure of infrastructure components, damage from natural or fabricated environmental hazards, and use by unauthorised personnel.

Physical Security and Facilities Engineering are responsible for the implementation of physical and environmental controls in ICE data centres and office locations, while the Information Security department makes the use of threat intelligence for continuous monitoring of physical and cyber threats.

ICE's Physical Security Policy also sets out guidelines, security standards and control expectations for data centers within its subsidiaries, including ICEU.

Physical security and Information security are subjected to tests undertaken both by Internal Audit and independent external expert resources. A rigorous Service Organisation Control ("SOC") audit is performed annually to produce independent verification and testing of ICE's controls for external parties and auditors that rely on ICE. The scope of this report is evaluated each year and tailored in response to customer feedback and business development.

ICE Physical Security Policy takes guidance from the US department of Homeland Security Interagency Security Committee (ISC) practices in building ICE's physical security model. As an FI designated with critical national infrastructure status in UK finance sector, ICEU also takes guidance from UK Centre for Protection of National Infrastructure (CPNI) in building physical security controls.

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| **Key Consideration 6** | **An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.** |

The overriding objectives of ICEU's BCP and DR Framework are to ensure:

- Timely recovery of operations and fulfilment of clearing obligations, including in the event of a whole-scale or major disruption; and
- Effective coordination among affected parties during a BCP/DR event.

As part of the BCP/DR Framework, ICEU has established BCP and DR programmes (which are supported by annual Business Impact Analysis) that are evidenced through BCP and DR policies, crisis communication and management plans, BCP action plans and Pandemic plans. These programmes and plans are designed to preserve ICEU's functions, the timely recovery of operations and systems and the fulfilment of ICEU's obligations as a CCP. Oversight over BCP and DR programmes are provided by the Operations Oversight Committee that reports to the ICE Board of Directors.

ICEU Business Continuity and Disaster Recovery plans include the requirement to conduct exercises regularly to test the Business Continuity and Disaster Recovery arrangements, which involve staff in the ICE Group through outsourcing arrangements. ICEU also participates in industry-wide exercises in this area (please refer to 17.6.7 for information). ICEU has revised its BC/DR Framework to consider disruptions to third party service providers and has documented exit strategies for each current third party outsourcing arrangement.

ICEU's DR plans provide recovery strategies, technical and procedural guidance, recovery metrics/objectives (Recovery Time Objective - RTO, Recovery Point Objective - RPO), DR roles and responsibilities to enable the resumption of critical systems (e.g. clearing systems, clearing risk and treasury systems), databases and operations and complete settlement by the end of the day.

ICEU has highly resilient and state-of-the-art technology infrastructure and recovery arrangements to ensure its operations and services are resumed effectively during crisis and disaster scenarios - as detailed in previous sections (17.6.1 - 17.6.5).

When available, ICEU participates in both DR and BCP market wide exercises; Futures Industry Association ("FIA") DR test, Bank of England Sector Exercises and the Cross Market Business Continuity Group (CMBCG).

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| **Key Consideration 7** | **An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.** |

As part of its wider risk identification and assessment processes ICEU has identified risks that it bears from key participants, other FMIs, and service and utility providers - see Principle 3 Key Consideration 1 for more information.

In addition, refer to Principle 4 (Credit Risk) for more information on how ICEU manages its risks posed by key participants.

ICEU has a major operational dependency on its parent ICE, ICC, and IFEU to provide clearing and other systems as well as utilities and facilities. This key operational risk is central to the operational risk framework and is therefore given the appropriate level of attention. All ICEU's outsourced services are governed by (internal) Master Outsourcing Agreements and (external) contractual arrangements.

The clearing systems, utilities and facilities outsourced to ICE Inc, ICC and IFEU are subject to a number of independent reviews that provide assurance that these operations meet the same reliability and contingency requirements they would need to meet if they were provided internally. These include annual audits of compliance with the requirements of the SEC's Regulation Systems Compliance and Integrity (Reg SCI), the CFTC's Systems Safeguards as well as Service Organisation Control (SOC2) reports that provide assurance on the security, availability and confidentiality of the outsourced systems.

Information Security and Business Continuity matters are overseen via the OOC (see Key Consideration 5 above) which has ICEU staff as participants.

ICEU's core operational activities including, clearing operations, clearing risk and treasury and banking services are performed in-house, with support from a number of IT service providers (ICE, and ICC) and other financial institutions (State Street, JP Morgan, CitiBank, BNYM, EuroClear and Clearstream).

ICEU does not currently provide interoperability with other clearing houses either within the ICE or with third party Clearing Houses. As such, ICEU poses limited risks on other FMIs.

When available, ICEU participates in both DR and BCP market wide exercises (refer to 17.6.7 for information).

## 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.**

| Key Consideration 1 | An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements. |
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Rule 201 of the ICEU Clearing Rules and the Membership Procedures set out the membership on-boarding criteria that applicant firms are required to meet in order to become Clearing Members of the CCP. The Clearing Member application process ensures that applicants evidence compliance and the on-going annual member return process ensures that relevant detail is regularly updated. The risk-related membership criteria (listed under Rule 201 of the ICEU Clearing Rules) are applied consistently to all applicants and existing Clearing Members. Additional membership requirements for CDS and FX Clearing Members are set out in the CDS Procedures and FX Procedures.

The risk-related membership criteria (listed under Rule 201 of the ICEU Clearing Rules) are applied consistently to all applicants and existing Clearing Members.

| Key Consideration 2 | An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit. |
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The membership criteria listed in Rule 201 of the ICEU Clearing Rules, and the relevant Procedures, refer to risk-based requirements including the operational competence, the experience, the financial soundness, the conduct track records and the level of credit risk. These are applied equally across applicants and existing Clearing Members and are all designed to ensure a safe and efficient clearing process for the markets in which its Clearing Members and their customers participate.

Such criteria arrangements undergo appropriate regular internal reviews and have been established and updated following consultations with the Clearing Members on amendments to the relevant rules. These rules have the aim of allowing access to the Clearing House's services on a fair, reasonable and consistent basis, having the least-restrictive impact on access that circumstances permit. The access criteria are in line with criteria established in peer organisations.

In addition to the abovementioned risk-based criteria, the ICEU Clearing Rules also refer to criteria that are not necessarily risk based but are required by the applicable laws or regulations. These include:

- having in place all necessary regulatory authorisations, licences, permissions and approvals in the Clearing Member's country of origin, the UK and any other jurisdiction in which it conducts business;
- having officers, directors and Controllers each meeting the requirements for an 'approved person' (for individuals) or 'controller' (for partnerships, companies and other bodies corporate) under applicable FCA Rules and PRA Rules;
- having been subject to customer due diligence measures under the Money Laundering Regulations to ICEU's satisfaction; and

- not being subject to Sanctions.

The access criteria in Rule 201 are applied equally across Clearing Members and applicants in relation to the different ICEU cleared product sets.

Relevant criteria are monitored on an on-going basis, as ICEU reviews its Clearing Member composition to ensure that it is comprised of entities of appropriate size, market coverage and business profile.

The ICEU Clearing Rules, inclusive of the information on the access criteria, are publicly available at:

https://www.theice.com/clear-europe/regulation#rulebook

| Key Consideration 3 | An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements. |
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ICEU use a variety of tools to monitor Clearing Members' compliance with its access criteria:

- Counterparty Credit Risk Management - daily monitoring of breaches/exceptions in Clearing Member performance measures, including:
  - Number of special Margin calls;
  - Guaranty fund, collateral and initial Margin levels;
  - Missed Margin payments/EOD cash calls;
  - Counterparty credit rating; and
  - Capital to Margin limits.
- Monitoring of Clearing Members' compliance with ICEU's Clearing Procedures and Delivery Procedures by ICEU Operations department;
- Watch List monitoring;
- Monitoring of the Counterparty Rating System ("CRS"), which aggregates key risk factors covering credit, market price, and liquidity risk;
- Review of monthly credit reports (at a minimum) with latest financial data submitted by Clearing Members;
- Annual credit reports provided to relevant Product Risk Committees (CDS and F&O) which summarise a Clearing Member's audited annual financial statements; and
- Correspondence with relevant Clearing Member's management, legal counsel and regulators, as appropriate.

The participation requirements generally do not limit access on grounds other than compliance and risk. The requirements are based upon non-discriminatory objective criteria described above. In case of risk profile deterioration, the Clearing Membership Policy and the Counterparty Credit Risk Policy establish actions that the Clearing House may trigger.

ICEU has objective and transparent procedures for the suspension and orderly exit of Clearing Members as set out in Rules 208 and 209.

ICEU may only deny access to Clearing Members which do not meet the objective criteria listed in the abovementioned Rules.

Relevant procedures are detailed in the ICEU Clearing Rules and Procedures (please see Rules 208 and 209) which are publicly available at: https://www.theice.com/clear-europe/regulation#rulebook.

## PRINCIPLE 19: TIERED PARTICIPATION ARRANGEMENTS

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

| Key Consideration 1 | An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements. |
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ICEU primarily 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).[2]

ICEU requires Clearing Members who offer client clearing to hold segregated house and client accounts for positions and Margin and offers a choice of client segregated account structures. This model supports clearing of direct clients (a client of a Clearing Member) as well as indirect clients (a client of a client of Clearing Member) - together referred to in this self-assessment of PFMI compliance as "indirect participants".

ICEU offers the following client segregated accounts so that Clearing Members can provide indirect participants with a choice in the level of asset protection they opt for:

- Customer Omnibus Accounts for F&O Clearing;
- Customer Omnibus Accounts for OTC CDS Clearing;
- Individual Segregation through Sponsored Principal Account;
- Individually Segregated Margin-flow Co-mingled Account (known as "ISOC"); and
- Standard and Gross Omnibus Indirect Customer Accounts.

These accounts are described in detail in the response to Principle 14.

ICEU also offers a FCM model that is compliant with CFTC requirements for Clearing Members that have US based clients.

ICEU Clearing Rules permit it to collect information from Clearing Members about indirect participants, mainly via mandating the submission of the End of Day GCM File.

In addition, please also see ICEU's self-assessment against Principles 14 and 18 which sets out the relevant segregation models and approach to portability. Clearing Members are subject to Credit Risk Reviews on a cycle of four years, as part of which Clearing Members are required to provide information on their risk management arrangements.

Clearing Members are required to ensure that documentation with indirect clients is in line with the ICEU Clearing Rules and Standard Terms.

ICEU operates primarily 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). Risk analysis is therefore primarily focused on the Clearing Member.

[2] Even with respect to FCM/BD Clearing Members, who act for the account of and of behalf of their customers, ICEU's obligations are owed to the FCM/BD Clearing Member, not directly to the customers, and the FCM/BD Clearing Member becomes liable to the Clearing House as if the relevant contracts were for the FCM/BD Clearing Member's own account (per Rule 1603(d)).

Notwithstanding the above, ICEU is currently developing a set of new information on tiered participation to be shared with the Board via risk metrics.

The material risks arising at ICEU from tiered participation are the default of a client, which disrupts or materially or adversely affects a Clearing Member. In the event of a Clearing Member default, ICEU could face risks should clients of a defaulting Clearing Member not be able to port or closed out.

ICEU mitigates risks by applying on a conservative approach the same risk methodology for clients and Clearing Member positions.

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| **Key Consideration 2** | **An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.** |

ICEU identifies material dependencies through monitoring of Clearing Members and the activity in each of its client accounts, be they in omnibus or segregated accounts. ICEU is able to show the proportion of house to client activity for its Clearing Members and, where clients are known, ICEU is also able to establish an account of the exposure to named clients in total, by clearing service and by Clearing Members.

ICEU monitors all Client Accounts on a continuous-time basis (i.e. real-time or daily, depending on the control) as part of its overall review of its Clearing Members. This includes, inter alia, intra-day Margin exposures, application of specific capital-to-Margin ratios on the customer account and application of concentration charges (as appropriate) on the customer account. A more detailed explanation of ICEU's segregation and portability arrangements is provided at Principle 14 (Segregation and portability).

ICEU looks through to indirect participants in terms of position or market risk and collateralises the risk to the same confidence level as if it is brought by its direct participant. This approach is consistent with its credit risk management. Whilst the default probability is based on the direct participant, the market risk component takes full consideration of both direct and indirect participant positions. In summary, ICEU takes a very conservative approach to the risk and treats higher-order risks as if they represented a primary risk to the Clearing House.

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| **Key Consideration 3** | **An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.** |

ICEU identifies indirect participants responsible for significant proportions of transactions by monitoring the activity of its Clearing Members and the activity in each of its client accounts. It is able to show the proportion of house to client activity for its Clearing Members and, where clients and indirect clients are known, ICEU is able to build a picture of the exposure to named clients in total, by clearing service and by Clearing Member.

ICEU's risk in the event of default by a Clearing Member is the position of the Clearing Member and its clients. Accordingly ICEU's primary focus is on monitoring positions rather than volumes or values of transactions.

ICEU monitors daily reports of client positions and associated cash flows. ICEU applies Margin multipliers, where a participant's client portfolio is overly concentrated. Both ICEU and the ICE Exchanges to which it provides clearing services monitor trading activity and positions of indirect clients through, inter alia, Large Trader Reports and monitoring of positions ahead of physical delivery. Where appropriate, ICEU will require additional Margin to be posted in the form of:

- concentration charges
- stress loss charges
- capital-to-margin ratios

- shortfall margin
- buffer margin

| Key Consideration 4 | An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate. |
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ICEU reviews the risks arising from tiered participation arrangements through the production of daily client positions and associated cash flow reports. ICEU applies Margin multipliers, where a participant's client portfolio is overly concentrated.

ICEU monitors all Client Accounts as on a continuous-time basis (i.e. real-time or daily, depending on the control) as part of its overall review of its Clearing Members. This includes, inter alia, intra-day Margin exposures, inclusion in its Counterparty Rating System, application of specific capital-to-Margin ratios on the customer account and application of concentration charges (as appropriate) on the customer account. A more detailed explanation of ICEU's segregation and portability arrangements is provided at Principle 14 (Segregation and portability).

ICEU has taken legal opinions on the enforceability of its Clearing Rules in all jurisdictions where Clearing Members are based.

## PRINCIPLE 20: FMI LINKS

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

| Key Consideration 1 | Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report. |
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ICEU operates within ICE's integrated trading and clearing model for Futures & Options contracts as well as providing centralised clearing for certain OTC Credit Default Swaps.

ICEU has in place links with CSDs, custodians, APS banks and some of its outsourcing providers.

Each proposed new link is subject to an internal assessment with the following aspects being considered: the rationale and need for the proposal (whether business or regulatory), market options for the FMIs, due diligence, risk analysis (including credit, liquidity, operational, custody, concentration, legal), the internal governance process to be followed and the approvals needed. The criteria against which the link is assessed is set out in the applicable internal policies and frameworks. Internal policies and frameworks also take into account the applicable considerations of Principles 7, 16, 17 and 18.

Further, ICEU's Recovery Plan sets out the relevant information and steps to take in the event of severe financial stress and losses, building on the existing risk management tools, policies and procedures. The Recovery Plan takes into account the links with FMIs, with a focus where critical services and interdependencies are provided through such links.

The systemic risks posed by certain FMIs are further mitigated by ICEU's settlement finality designation under the Financial Markets and Insolvency (Settlement Finality) Regulations 1999 (SFR), which enhances the systemic risk protection provided to Clearing Members in the event of a clearing counterparty default. Under SFR, payment instructions within ICEU's system can be protected from administrators or liquidators of insolvent firms.

Links with CSDs are set up for the secured holding of securities transferred to ICEU as Margin by Clearing Members. Links with such CSDs are assessed in accordance with ICEU's Finance Procedures and Approved Financial Institution Policy, with reference to the credit, liquidity, custody and operational risks that the link may raise. For certain FMIs of critical importance, part of the ongoing due diligence and monitoring also involves visits to the service providers' premises, an assessment of their organisational structure, financial stability, and their procedures for compliance and regulation, business continuity and critical payment processes.

In its Recovery Plan, ICEU has considered the impact of default loss and non-default loss as appropriate on certain exchanges and other elements of infrastructure. ICEU also recognises and regularly tests the dependency it has on the continued operation of elements of the financial infrastructure such as global payment and messaging systems.

| Key Consideration 2 | A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link. |
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ICEU maintains direct links in different jurisdictions, including the UK, Ireland, Luxembourg, Belgium, US, Singapore and Netherlands. All of these arrangements are underpinned by a contractual framework which is reviewed on an ongoing basis by internal and external legal counsel. In addition to ensuring that there is clarity on the choice of law, any legal risks arising from operating in a different jurisdiction are identified by legal opinions and, to the extent possible, mitigated through the contractual framework.

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| Thorough legal due diligence alongside the contractual framework and internal policies ensure that the links as detailed above have a well-founded legal basis. | |
| **Key Consideration 3** | **Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.** |
| N/A for ICEU | |
| **Key Consideration 4** | **Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.** |
| N/A for ICEU | |
| **Key Consideration 5** | **An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.** |
| N/A for ICEU | |
| **Key Consideration 6** | **An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary).** |
| N/A for ICEU | |
| **Key Consideration 7** | **Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.** |
| Before ICEU establishes a link (including with another CCP), ICEU carries out a detailed risk assessment, including with respect to business continuity risk, which identifies any risks to ICEU as well as any mitigants which ICEU could utilise in the event of the default of the linked CCP. This risk assessment is taken through internal governance before the proposed link implemented. ICEU followed this process in respect of the links which it has established with certain other CCPs in the ICE group for the purposes of intragroup support providing its important business services. ICEU has not established any links with other CCPs which entail the provision of margin offsets or interoperability. | |
| **Key Consideration 8** | **Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.** |
| N/A for ICEU | |

| Key Consideration 9 | A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources. |
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| N/A for ICEU | |

## PRINCIPLE 21: EFFICIENCY AND EFFECTIVENESS

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

| Key Consideration 1 | An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures. |
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The ICEU Clearing Rules and Procedures of ICEU are available to the public via the ICEU website. The ICEU Clearing Rules require ICEU to consult with Clearing Members for proposed new or amendments to existing ICEU Clearing Rules.

ICEU's Product Risk Committees (for CDS and F&O) include representatives of Clearing Members, and the Client Risk Committee includes representatives of Clearing Members and customers. Through these risk committees and other established working groups (e.g. Technical Operations Group) ICEU seeks to meet the needs of its Clearing Members and the markets it serves in terms of products and services, clearing/settlement operations, risk management functions and technology.

ICEU has a formal process through its website to publicly disclose rule filings (made with the SEC and CFTC), quantitative disclosures, policy and procedural changes, service and product changes. In recent years ICEU enhanced its internal process for the review and approval of all new products to ensure the appropriate levels of approvals are achieved both in terms of internal and external governance.

ICEU also publicly discloses information regarding its organisational structure, corporate objectives, high level financial resources information (e.g. Guaranty Fund requirements, Margin), financial accounts and technology systems to provide transparency over its operations and services. See: https://www.theice.com/clear-europe/regulation.

The ICEU CRC includes Clearing Members, clients and independent non-executive director representation. This Committee advises the ICEU Board on any arrangements that may impact the risk management of ICEU, such as a significant change in its risk model, the default procedures, the criteria for accepting Clearing Members, the clearing of new classes of instruments or the outsourcing of functions.

Separately, the Product Risk Committees (F&O and CDS) provide a platform to discuss and address participant requirements, considerations and concerns with regards to ICEU's clearing and settlement services.

ICEU also has arrangements for informal engagement and consultation with Clearing Members, including bilateral discussions with Clearing Members, working groups - e.g. the Technology and Operations Working Group and the publication of proposed rules.

| Key Consideration 2 | An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities. |
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ICEU's documented corporate objectives and goals are 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 ICEU's systems and processes are set out in the Risk Appetite Framework, which provides quantitative and qualitative definitions of risk appetite and tolerance covering core services provided by ICEU.

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| Through regular business, operational and risk management reviews, ICEU assesses its performance against its objectives on an ongoing basis. | |
| **Key Consideration 3** | **An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.** |
| **ICEU Comment:** ICEU observes this Key Consideration as it has established mechanisms for the regular review of its efficiency and effectiveness. | |
| Management information, including ICEU's financial performance (budget vs actual), capital requirements, cleared volumes, margin levels, operational incidents (including cyber incidents) and clearing platform/system performance (e.g. critical system uptime, EOD processing) are reviewed by the Board and its committees in accordance with the duties and responsibilities set out within the Terms of Reference. | |

## 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.**

| Key Consideration 1 | An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards. |
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ICEU uses SWIFT for messaging of payment transactions, Secure File Transfer Protocol (SFTP), WebSphere Messaging Queue ("MQ"), FIX API and FIXML to message clearing of transactions (including both new transactions and amendments to transactions). These messaging protocols are internationally accepted communication standards and procedures.

ISG (ICE SWIFT Gateway) functions as the interface between the internal clearing systems and the external industry-standard SWIFT (i.e. Society for Worldwide Interbank Financial Telecommunication - proprietary communications platform and service that connects internal clearing systems to external financial institutions to exchange information securely and reliably) network.

## 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.**

| Key Consideration 1 | An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed. |
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The ICEU Clearing Rules and Procedures are publicly available to Clearing Members and market participants via a link on the following webpage:

https://www.theice.com/clear-europe/regulation

The ICEU Clearing Rules and Procedures are to be interpreted in accordance with Guidance and Circulars published by ICEU from time to time (pursuant to the definition of "Rules" in Rule 101).

ICEU Circulars can be found at:

https://www.theice.com/clear-europe/circulars

One of the aims of ICEU Guidance and Circulars is to provide additional assistance to Clearing Members and market participants in explaining ICEU Clearing Rules and procedures and making their implications as clear as possible.

Pursuant to Rule 109, ICEU consults with its Clearing Members on all proposed rule changes (apart from in some limited circumstances, as set out in Rule 109(b)) and undertakes prescribed regulatory filing and notification processes, all of which ensure comprehensive review and challenge of the clarity and comprehensive nature of the rules and procedures.

The ICEU Clearing Rules comprehensively cover a number of material topics including:

- Part 2: Clearing Membership
- Part 3: Financial Requirements and Payments
- Part 4: Clearing Mechanism
- Part 5: Margin
- Part 6: Position Limits
- Part 7: Settlement and Delivery of Futures
- Part 8: Options
- Part 9: Default Rules
- Part 10: Disciplinary Proceedings
- Part 11: Guaranty Funds
- Part 12: Settlement finality Regulations and Companies Act 1989
- Part 15: Credit Default Swaps
- Part 16: FCM/ BD Clearing Member Provisions
- Part 17: Foreign Exchange
- Part 19: Sponsored Principals

- Part 23: Rules for Market transitions

In particular, Part 9 of the ICEU Clearing Rules and relevant Default Auction Procedures contain sections relating to actions to be taken following declaration of a Clearing Member Event of Default:

- Treatment of Contracts following a Clearing Member Event of Default and Hedging;
- Transfer of Contracts and Margin on a Clearing Member Event of Default;
- Termination and close out of Contracts on a Clearing Member Event of Default;
- Administrative matters concerning an Event of Default;
- Application of Assets upon an Event of Default;
- Powers of Assessment;
- Reduced Gains Distribution;
- Auctions;
- Cooling-off period and Clearing Member termination rights;
- Termination of membership;
- Non-Default Losses and Investment Losses; and
- Guaranty Fund Contributions and replenishment.

The Standard Terms Annex provides a contractual framework for actions to be taken regarding Customer Account contracts and margin following declaration of a Clearing Member Event of Default for non-FCM/BD Clearing Members and Customers) (see Principle 14 for details).

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| **Key Consideration 2** | **An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.** |

ICEU publicly discloses the general principles underlying its models and methodologies, the nature of tests performed with a summary of the test results and any corrective actions undertaken via this webpage: https://www.theice.com/clear-europe/risk-management

Relevant discretions, rights and obligations reserved to and imposed on ICEU, its Clearing Members and other market participants are clearly articulated in the ICEU Clearing Rules and Procedures which are publicly available at:

https://www.theice.com/publicdocs/clear_europe/rulebooks/rules/Clearing_Rules.pdf (please also see Rule 102(p)).

ICEU's regulatory disclosures are publicly available to Clearing Members and other market participants via this webpage: https://www.theice.com/clear-europe/regulation

These disclosures, in conjunction with the ICEU rules and procedures and information in respect of ICEU models and methodologies allow participants to assess the risks they would incur by participating in clearing with ICEU.

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| **Key Consideration 3** | **An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.** |

ICEU ensures that documentation such as ICEU Clearing Rules, Procedures and regulatory disclosures is publicly available at:

https://www.theice.com/clear-europe/regulation

It is ICEU's understanding that its Clearing Members are sophisticated market participants co-operating fully with ICEU and meeting relevant legal, risk and operational obligations and requirements in accordance with the ICEU Clearing Rules, Procedures and applicable laws and regulations. Therefore, ICEU understands that its Clearing Members predominantly co-ordinate their own training programmes.

Clearing Members are also under an obligation under the ICEU Clearing Rules to ensure that they have adequate systems and controls in place in order to ensure that their Representatives are adequately trained (Rule 202(a)(xiv)(D)).

That said, any market participant with a WebICE trader ID can access the 'Trader Dashboard', which contains a range of videos and documents regarding the trading functionality. From time to time, specific product pages on the ICE website may also publish recorded webinars, which market participants can access for free. These resources are supplementary however, to Clearing Members' own training programmes.

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| **Key Consideration 4** | **An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.** |

The costs of using the clearing services and any changes to these costs are documented via Circulars which are published on the website at https://www.theice.com/clear-europe/circulars.

ICEU provides all the details of its clearing services (including technology and communication procedures) publicly on the ICEU section of the ICE website https://www.theice.com/clear-europe/client-clearing

The information that is publicly displayed at the above sections of the ICE website will allow comparisons to be made to the extent that other FMIs offer similar services.

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| **Key Consideration 5** | **An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.** |

It is ICEU's policy to review regularly (at least annually) its responses to the "CPSS-IOSCO Disclosure Framework for Financial Market Infrastructures", with consideration to changes to its products/services, business/organisation structure, policy, processes and control environment, systems and technology and the regulatory environment.

A link to ICEU's public disclosure of responses to the "CPSS-IOSCO Disclosure Framework" document is available on this webpage:

https://www.theice.com/clear-europe/regulation The latest published link is available here:

https://www.theice.com/publicdocs/clear_europe/ICE_Clear_Europe_Disclosure_Framework.pdf

ICEU discloses data on transaction volumes and values for the clearing services that it offers here: https://www.theice.com/marketdata/reports. Price information is also made available. ICEU publishes the end of day prices that are used by the CCP for the purposes of undertaking settlement and/or mark to market of Clearing Member positions at the end of each day. This data is available to Clearing Members and to their customers in a variety of forms and through a number of channels, including trade and position statements; IRM (ICE Risk Model); price files and third-party quote vendors. This data is available through both secured channels (e.g. when disclosed as part of a Clearing Member Position Statement) and public channels.

ICE Market Data via the ICE Website:

https://www.theice.com/market-data

IRM (ICE Risk Model) via the ICE Website:

https://www.theice.com/clear-europe/risk-management

IRM (ICE Risk Model) User Guide is available via the ICE website:

https://www.theice.com/publicdocs/clear_europe/ice_risk_model_tool_user_guide.pdf

ICEU has a dedicated section of theice.com website devoted to its operations (https://www.theice.com/clear-europe).

This includes sections on:

- Clearing Risk (including details of margin methodology and relevant margin rates, Product and Board Risk Committee details, risk waterfalls, guaranty funds, back testing and default management);
- Membership (details of membership criteria and Clearing Members), Circulars that have been issued by ICEU, Operations (including Banking and Billing procedures and relevant delivery forms);
- Technology (including details of various ICEU systems, PTMS, ACT, ECS, MFT, SWIFT, and "ICE Community" groups);
- Treasury & Banking (details of consolidation banks, APS, investment activities, acceptable collateral and haircuts); and
- Client Clearing and Cleared Products.

It also contains a Regulation section containing the ICEU Clearing Rules and Procedures, relevant rule filings, regulatory disclosures and quantitative disclosures).

The information referenced in 23.5 is available on dedicated section of theice.com website devoted to its operations (https://www.theice.com/clear-europe) in English.