Turquoise Global Holdings Limited (Turquoise) Pillar 3 Disclosures 2018

Introduction

The Capital Requirements Directive IV (CRD IV) establishes a regulatory capital framework for EEA based firms governing the amount and nature of capital investment firms must maintain. CRD IV is made up of the Capital Requirements Regulation (575/2013) (CRR), which is directly applicable to firms across the EU, and the Capital Requirements Directive (2013/36/EU) (CRD) , which is transposed into national law through UK legislation.

In the United Kingdom, CRD IV has been implemented by the Financial Conduct Authority (FCA) in its regulations through the Prudential sourcebook for Investment Firms (IFPRU).

The FCA Framework consists of three 'Pillars':

- **Pillar 1** sets out the minimum capital amount that meets the firm's credit, market and operational risk;
- **Pillar 2** requires the firm to assess whether its Pillar 1 capital is adequate to meet its risk and is subject to annual review by the FCA; and
- **Pillar 3** requires disclosure of specified information about the firm's underlying risk management controls and capital position.

Articles 431 – 455 of CRR set out the provisions for Pillar 3 disclosure.

Regulatory Status of Turquoise

Turquoise Global Holdings Limited ("TGHL", "the firm", "Turquoise") is a Financial Conduct Authority ("FCA") authorised investment firm and is classified as an IFPRU €730K limited licence firm for the purpose of calculating its regulatory capital requirements

Nature of Disclosures

This Pillar 3 annual disclosure is prepared by Turquoise management using information from the firm's audited financial accounts for the year ended 31 December 2017, and has been reviewed and approved by the Audit, Risk and Compliance Committee (ARCC) of the Turquoise Board. The above period is the scope of this disclosure.

Since the last submission of TGHL's 2017 Pillar 3 Disclosure, the following key updates have been reflected in the calculation:

1. The impact of the acquisition of a business, "SwapMatch", leading to a new business line and the subsequent hive-up to TGHL in December 2017;
2. The **Turquoise SwapMatch™** business line now part of **Turquoise NYLON™**.
   Note that Turquoise has prudently included **Turquoise NYLON™** specific risks within its Risk Register, and hence Pillar 2 capital requirement.

Initially founded by a consortium of nine investment banks, Turquoise has been majority owned by London Stock Exchange Group (LSEG) in partnership with the user community since 2010.

Turquoise operates a Multilateral Trading Facility (MTF). With a single connection, members can trade shares, depository receipts, ETFs, and European Rights Issues of 19 European countries, via an Open Access model that allows members to choose among three different central counterparties (CCPs) to clear these trades.

Membership is uniformly open to qualified firms, with members including banks, brokers, specialist trading firms and retail intermediaries. Sponsored Access and Direct Market Access are available to non-member participants. Turquoise participants benefit from fully risk-managed clearing solutions and market surveillance to ensure fair and orderly operations.

Turquoise features four discrete order books:

i) **Turquoise Lit™** Order Book combines simple limit and iceberg orders with Large in Scale hidden orders and is fully compliant with pre-trade and post-trade transparency obligations.

ii) **Turquoise Lit Auctions™** Order Book, introduced in December 2017. This is an innovation of price forming auctions within a Primary Market Best Bid and Offer (PBBO) Reference Price Collar, operating frequently and with pre-trade transparency throughout the trading day, supporting simple limit and PBBO midpoint pegged orders.

iii) The **Turquoise Plato™** Order Book, previously named the Turquoise Midpoint Dark Order Book, and renamed in September 2016, following the announcement of Turquoise signing a Cooperation Agreement with Plato Partnership.
Turquoise Plato™ features two distinct mechanisms, each executing at the midpoint of the Primary Market Best Bid and Offer: continuous matching and **Turquoise Plato Uncross™**, an innovation that provides randomised midpoint uncrossing during the day for larger and less time sensitive passive orders.

Turquoise Plato Block Discovery™ facilitates the trading of larger block Orders by matching Block Indications. On identifying potential matches, the service requires participants to send firm qualifying block orders to **Turquoise Plato Uncross™,** maximising available liquidity for customers of both services.

iv) **Turquoise NYLON™** brings together Turquoise's innovative equity derivative trading solutions: **Turquoise SwapMatch™** and **Turquoise CFD™.**
Turquoise SwapMatch™ is a venue for financial institutions to match block interests in equity total return swaps. **Turquoise SwapMatch™** facilitates the matching of large "block" interests in bilateral over-the-counter Total Return Swaps by seeking and identifying block matching opportunities between Members. Members can select which other Members they are willing to be matched with and may select other Matching Parameters to be applied during a Matching Run. Members are under no obligation to execute Suggested Swap Positions. Once both relevant Members Confirm any Suggested Swap Position on the same

terms, the Swap Position is executed, subject to standard bilateral confirmation procedures in place between the relevant Members.

Turquoise generates revenues principally from trading fees relating to trades executed on its platform. Additional revenue sources include market data and member connectivity fees. In order to preserve its neutrality as a market operator, the firm does not take principal positions. All trades executed on the order books are available for clearing via central counterparties (CCPs).

Turquoise has developed a Risk Management Framework designed to identify all material risks to which the business is exposed and to ensure the management of these risks in accordance with the Risk Appetite Statement.

As an entity majority owned by LSEG and reliant upon LSEG for many functions which it has outsourced, Turquoise operates a system of procedures for risk management in accordance with the guidelines provided by the LSEG Enterprise-wide Risk Management Framework policy, which ensures, for all group companies, a rigorous control system and consistent assessment of risk mitigation activities.

Turquoise uses Risk Appetite as a mechanism for articulating and monitoring accepted risk levels. The Risk Appetite sets out the acceptable risk levels to be taken in achieving Turquoise's strategy. Regular reporting of the status of each risk is performed, and each risk is classified as *inside* or *outside* appetite. Where a risk is outside appetite, a number of actions may be taken: *reduce the risk*; *alter the strategy* or *reassess the appetite*.

Any risks reported as outside risk appetite are escalated to the Turquoise ARCC and reported to the LSE Group Risk Committee (and to the LSEG Board for aggregated Group risks).

Operational Risk

Operational risk is inherent in any business and is of particular importance to the company given the low margin and technology-reliant nature of its business.

The business seeks to identify and use reasonable efforts to mitigate all sources of operational risk by establishing and actively managing a robust Risk Management Framework, supervised by Management and the ARCC and challenged by the Group Risk Function.

Particular attention is devoted to establishing clear procedures and accountability for critical business processes, change management, governance of outsourced functions, and ensuring business continuity.

Governance arrangements

Turquoise is governed via a Board of Directors that includes representatives from LSEG, from minority shareholders and independent directors. The Board is responsible for approving the annual business plan and the ARCC provides governance oversight in respect of the Risk Management Framework, including, but not limited to, ensuring Turquoise is in compliance with its responsibilities as a regulated firm. The ARCC challenges the management team and ensures sufficient monitoring is in place to ensure its control environment is adequate.

Director information can be found in the Directors' Report section of the firm's audited financial statements.

To ensure effective governance, the respective responsibilities and authorities of the Board, ARCC and the Company's management are clearly defined.

- Day-to-day operations of the business are delegated to management, subject to reporting obligations and specified authorisation limits captured in a Board-approved delegation of authority policy.
- To ensure compliance with this policy, Turquoise operates a strict authorisation process for purchasing, authorising payments, expense management, writing off bad debt and project management spend.

Management are responsible for maintaining and applying a Risk Management Framework to identify and assess risks facing the business and have developed a framework of systems and controls to ensure that they can be managed effectively within the agreed Risk Appetite.

Turquoise maintains a detailed Risk Register which is updated regularly and feeds into the Internal Capital Adequacy Assessment Process (ICAAP). This Risk Register is subject to quarterly review by the ARCC and is provided to the TGHL Board.
The Risk Register is maintained in accordance with a documented procedure and gathers input from all functional areas (both internal and outsourced) to ensure its accuracy and completeness. Material Risks are also incorporated into the LSEG Risk process.

Turquoise's commercial success and status as a company affiliated with LSEG requires a risk averse approach to sources of reputational risk, including those arising from regulatory compliance.

Any risk crystallising is escalated through defined escalation procedures. These procedures are documented and periodically checked by the Turquoise COO. All sources of reputational risk are escalated to the Turquoise CEO, ARCC and to the Group Risk Function.

Composition of Own Funds Capital Resources

	(£000)
Common Equity Tier 1 capital: instruments and reserves	
Capital instruments and the related share premium accounts	20,581
Retained earnings (losses)	-11,035
Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	30,334
Common Equity Tier 1 (CET1) capital before regulatory adjustments	**39,880**
Common Equity Tier 1 (CET1) capital: regulatory adjustments	
Intangible assets (net of related tax liability)	-12,709
Deferred tax assets that rely on future profitability excluding those from temporary differences (net of related tax liability where the conditions in article 38 (3) are met)	-4,627
Total regulatory adjustments to Common Equity Tier 1 (CET1)	**-17,336**
Common Equity Tier 1 (CET1) Capital	**23,829**

Additional Tier 1 (AT1) Capital	
Additional Tier 1 (AT1) Capital	**0**
Tier 2 (T2) Capital	
Tier 2 (T2) Capital	**0**
Total Capital	**23,829**
Total risk weighted assets	49,114
Capital ratios and buffers	
Common Equity Tier 1 (as a % of risk exposure)	49%
Tier 1 (as a % of risk exposure)	49%
Total Capital (as a % of risk exposure)	49%

Based on audited financial accounts for the year ended 31 December 2017

Assessment of Capital Adequacy

As an IFPRU €730K limited licence firm that operates an MTF, Pillar 1 capital is the higher of:

1. Base requirement of €730,000 applicable to investment firms
2. Sum of:
    a. Credit risk capital requirement - Credit risk for TGHL is calculated using the Standardised approach under *IFPRU 4.2 (CRR Article 92(3))* guidance.
    b. Market risk capital requirement – TGHL market risk exposure is related to foreign exchange PRR under *IFPRU 6.1-6.2 (CRR Article 92(3))* guidance.
3. Fixed Overhead requirement (FOR) per definition and calculation methodology defined under *CRR Article 97(4).*

Turquoise undertakes the ICAAP annually, and on a quarterly basis reviews its cost and revenue forecasts to ensure it will maintain adequate capital under any foreseeable market conditions.

Capital Conservation Buffer (CCoB) and Countercyclical Capital Buffer (CCyB)

Turquoise, as an IFPRU limited licence firm, is exempt from holding a CCyB or CCoB on the basis of IFPRU 10.1.1.

Credit Risk

Credit risk originates from credit exposures with member firms and clients as well as on cash, cash equivalent balances and deposits with treasury counterparties.

Turquoise does not have permission for "dealing in investment as principal" and thus does not act as principal to any transactions. Accordingly, with respect to dealing with member firms and clients, credit and counterparty risks arise only in the context of a potential member's failure to pay its fees.

The Credit Risk Capital Requirement for Turquoise is determined using the Standardised Approach per *IFPRU 4.2 (CRR Article 92(3)* and detailed further in *CRR Article 111-141*) guidance. This multiplies the debtor balance with the risk weighting (after assessing type of exposure, geographical location and External Credit Assessment Institutions (ECAIs) ratings) and then with the Credit Risk Capital Component Requirement (currently 8%).

For information regarding “past due” and “impaired” debtors, refer to the firm’s audited financial accounts.

Exposure class, maturity and geographic location, based on the audited financial accounts for the year ended 31 December 2017 were as follows.

Exposure Class	
Institution	99.80%
Corporate	0.20%

Maturity	
< 90 days	88.34%
> 90 days	11.66%

Geographic location	
UK	95.53%
USA	2.91%
Europe	1.52%
Other	0.03%

The Credit Risk Capital Requirement, based on the audited financial accounts for the year ended 31 December 2017, was £983k.

Credit Risk Mitigation

Credit risk is controlled through policies and procedures developed by Turquoise and its ultimate parent, LSEG.

Credit quality of member firms is assessed on the basis of financial position, historical performance and other factors. Trade receivables, net of impairment, are concentrated in the financial sector, and are managed as one class of receivables. There are no material concentrations of credit risk with respect to trade receivables and Turquoise has a low historic incidence of defaults. Given this, and the recurring nature of billing and largely automated collection arrangements, management assesses the credit quality of Turquoise’s members as high. Turquoise does not use on-balance sheet netting, nor does it have collateral or guarantees.

Market Risk

The Market Risk Capital Calculation for Turquoise has been determined in accordance with *IFPRU 6.1-6.2 (CRR Article 325-361)* where market risk capital requirement is the sum of the following position risk requirements (PRR):

a) Position risk PRR;
b) Foreign exchange risk PRR; and
c) Commodity risk PRR.

Of the above, Turquoise only has (b), foreign exchange risk PRR, as a market risk requirement under *IFPRU 6.1-6.2*, with market risk coming from foreign currency movements in Turquoise’s foreign currency assets (mainly cash).

Turquoise's reporting currency is Pound Sterling, but Turquoise operates a multi-currency business. Revenues are in Pound Sterling or Euro and costs are in a variety of currencies, though with a majority in Pound Sterling. Foreign Exchange risk for Turquoise is therefore low.

- The Market Risk Capital Requirement, based on audited financial accounts for the year ended 31 December 2017, is £60k.

Interest Rate Risk

Turquoise is not debt financed and hence is not exposed to interest rate risk as a borrower. Turquoise does have interest income that will vary with interest rates. However, this income is immaterial and irrelevant to the calculation of market risk.

Securitisation

Turquoise does not have any exposures to securitised positions.

Asset Encumbrance

Turquoise does not currently have any encumbered assets and this position is regularly monitored with the "COR005 Asset Encumbrance" COREP return, submitted by the firm on a quarterly basis.

Non-trading Book Equities

Turquoise does not have any exposures in non-trading book equities.

Remuneration

The latest FCA Remuneration Code Disclosure for Turquoise can be found on the LSEG website.