

CCP clearing for the South African bonds and repo markets

Market workshop – Session 4

08th August 2023

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- Introduction and recap
- Securities Collateral Service
 - Service Offering Vaneshri Chetty
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 - Collateral Account Options
 - Pledging, Substitutions & Withdrawals
 - Collateral Process Vaneshri Chetty
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Primary objectives of the Bonds CCP market workshops:

- I. **Consulting and collaborating with market participants** including trading members, clients, clearing members, Strate and CSDPs around the detailed design and requirements of the CCP clearing service.
- II. **Discussing and understanding the change impact and interdependencies** across the various market participants' business processes and IT systems.
- III. **Providing necessary project status updates** including updates to project timelines and key milestones.
- IV. **Providing the required training and support** to operational teams prior to market testing and go-live.

Who should attend these workshops?

Business managers, Business operation leads/managers, IT leads/ managers, Project managers

MARKET WORKSHOP DATES FOR 2023:

- ✓ Session 1 – 11th May
- ✓ Session 2 – 26th Jun
- ✓ Session 3 – 12th Jul
- Session 4 – 8th Aug
- Session 5 – 20th Sep
- Session 6 – 11th Oct
- Session 7 – 8th Nov

Agendas to be sent out two weeks prior to the workshop

Topics to be covered in workshop sessions:

- Trade novation ✓
- Account structure ✓
- Trade publication
- Trade cancellation
- Integration with internal and external systems ✓
- Deal management
- Position management
- Collateral Management (cash & securities)
- Settlement management ✓
- Risk management and margining ✓
- Fees and billing
- Reporting
- Default management ✓
- Clearing membership criteria ✓
- CCP rules, policies and procedures

Primary drivers for Bonds CCP

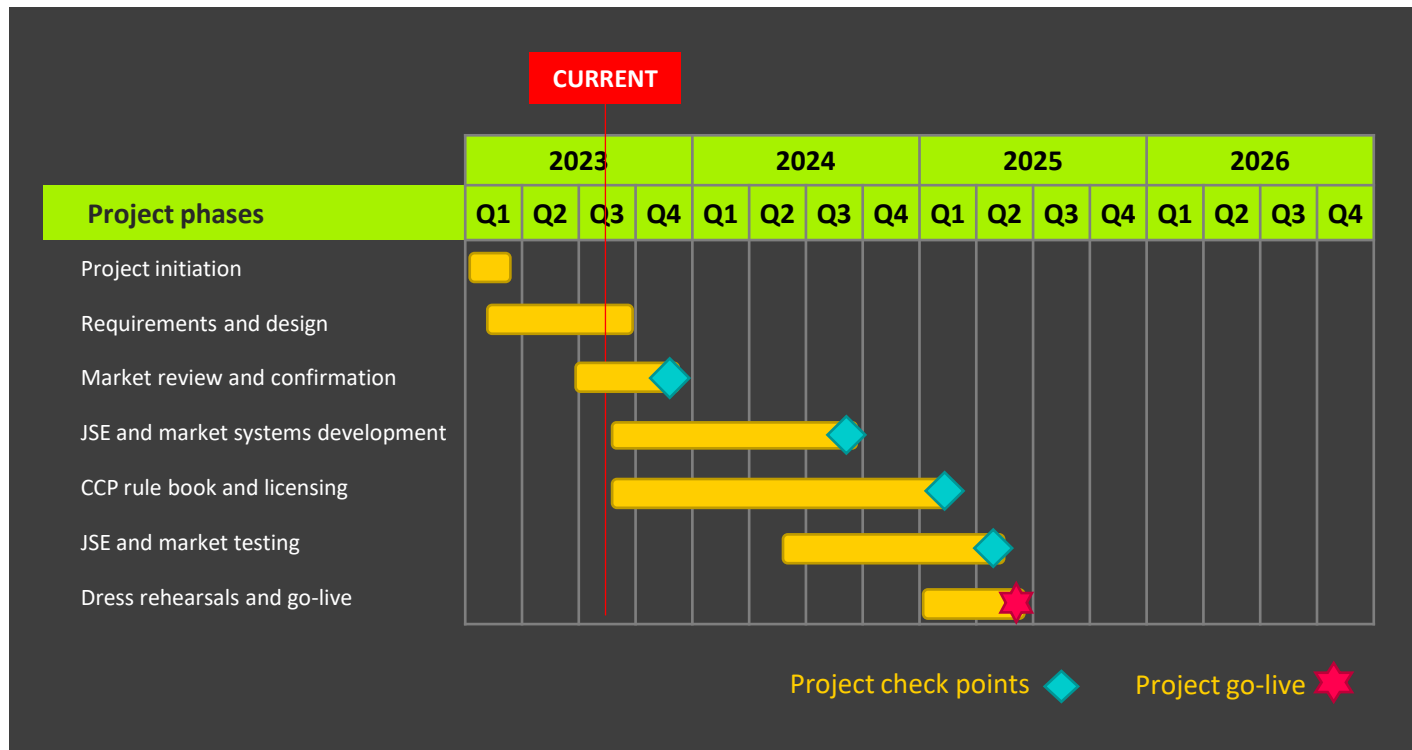
- CCP clearing is a critical service required to scale and increase trading activity in the Bonds ETP market, that is currently limited in access to the 10 Primary Dealers and represents only 1% of the total bonds and repo trading activity in SA. Electronic trading and CCP clearing of repos in European markets is close to 40% (and rising) of total trading activity.
- The three primary objectives and market benefits of Bond and Repo CCP clearing include:
 - i. broadened access to ETP and repo markets and increased trade liquidity;
 - ii. reduced counterparty credit risk and increased operational efficiency for banks; and
 - iii. improved market protection and price transparency.

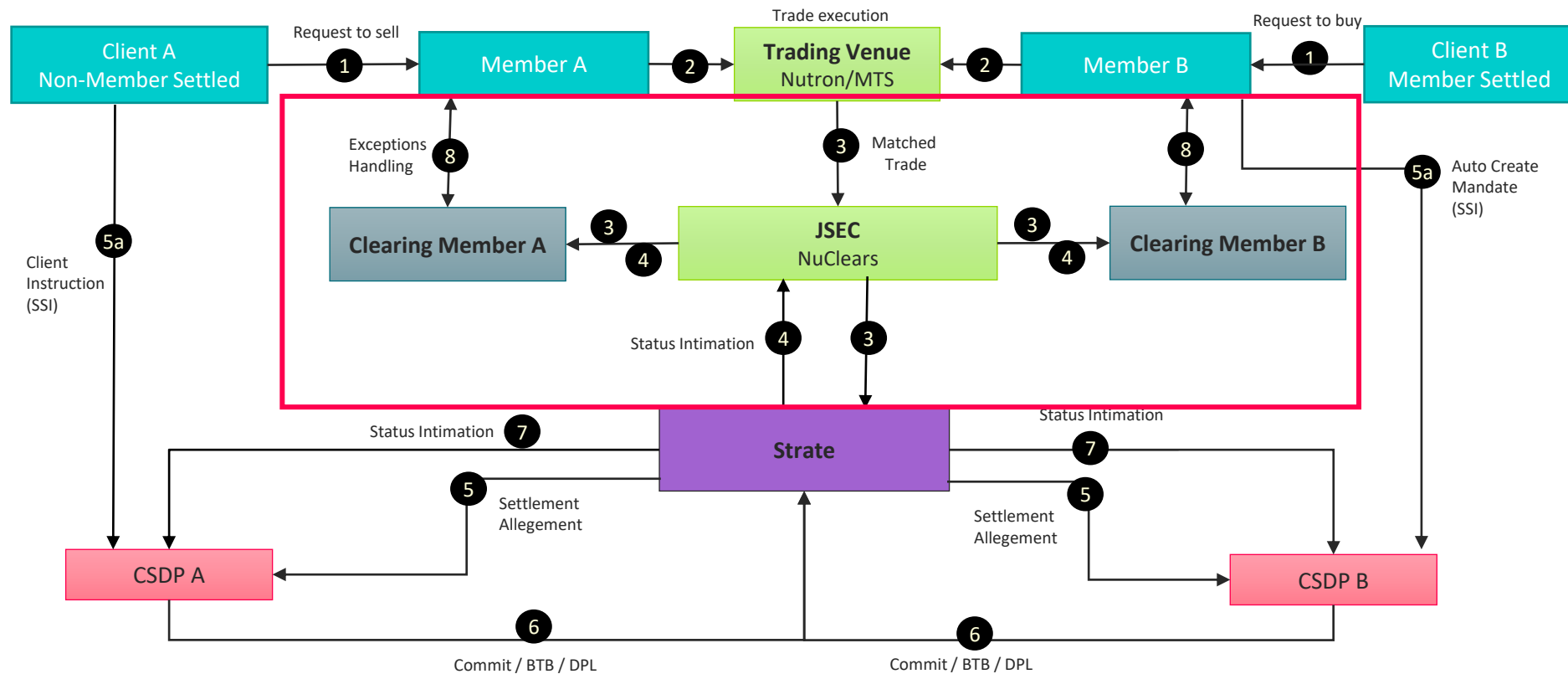
Why JSE Clear?

- JSE Clear is a fully independent and internationally recognised CCP.
- It is well positioned to leverage its existing CCP clearing infrastructure and integration with clearing member banks to provide a timeous and cost-effective domestic bond and repo CCP clearing service for SA.



- Project progressing well and on track for H2 2025 go-live.
- Requirements and design of the Bonds CCP targeted for completion in Q3 this year.
- Market participants to start mobilising their internal teams to commence internal design and system development work in Q3/Q4 2023.





CATEGORY	DESIGN	REASONING
Clearing Membership requirements	<p>Existing CM requirements will apply with additional bond specific requirements</p> <ul style="list-style-type: none"> Bond specific requirement example, CMs must have an arrangement with National Treasury to be the lender of last resort to fulfil client settlement obligations 	<ul style="list-style-type: none"> Leveraging the current framework as far as possible
Clearable Products	<p>The CCP will only clear products that have sufficient liquidity and daily trading volumes over a certain limit</p> <p>Phase 1:</p> <ul style="list-style-type: none"> Cash Bonds: SA Government Nominal and Inflation linked bonds Repos: SA Government Nominal bonds, fixed rate, buy-sellback All settlement cycles 	<ul style="list-style-type: none"> Ensure that the CCP has the ability adequately liquidate positions in the event of a clearing member default
Daily Risk Management	<p>Two core daily margin processes</p> <ul style="list-style-type: none"> <i>End-of-Day margin run:</i> Single margin run for all markets. Margin calls to be settled on T+1 (by 12h00) <i>Intra-day margin run:</i> In extreme volatile markets potential ad hoc intraday margin calls may occur during the trading day and must be settled in cash before 15h00 	<ul style="list-style-type: none"> Alignment with current processes
Risk Hierarchy	<p>Current JSEC risk management hierarchy applies</p> <p>Clearing member → Trading Member → Client</p>	<ul style="list-style-type: none"> Alignment with current processes

CATEGORY	DESIGN	REASONING
Default fund structure	<p>Single mutualised default fund</p> <p>The inclusion of cash bonds and repos in the current JSEC default fund structure that currently covers clearing of all JSE listed derivatives markets i.e. EQD, FXD, IRD and CMD.</p>	<ul style="list-style-type: none"> • Greater capital efficiency • Easier to provide cross product margin offset.
Margining methodology	<p>Portfolio VaR (with time-weighting)</p> <ul style="list-style-type: none"> • BRW historical simulation with Lamda (decay factor): 0.998 • CI: 99.5% • Liquidation Period: 2 days • Lookback Period: 5 years rolling lookback + 1 year stress period 	<ul style="list-style-type: none"> • Aligns closely to other CCP margining methodologies. • Aligns to current JSEC model review proposal
Cross product margin offset	<p>Cross product margin offset to be enabled</p> <p>Cross product margin offset between listed bond future, cash bonds and bond repo positions within the same underlying group i.e. nominal govi bonds and inflation linked bonds.</p>	<ul style="list-style-type: none"> • Cross product margin offset will assist in reducing the overall initial margin which will aid in growing cleared volumes.
Security collateral	<p>Securities collateral to be allowed</p> <p>ZAR cash and securities (liquid SA govi bonds) will be accepted as collateral against bond futures, cash bonds and bond repo margin requirements. Pledging of securities to be done via the Strate CMS service.</p>	<ul style="list-style-type: none"> • Will significantly reduce the cash capital required for initial margin and members can utilize lazy assets on their balance sheet to meet the margin requirements.

Securities Collateral Service

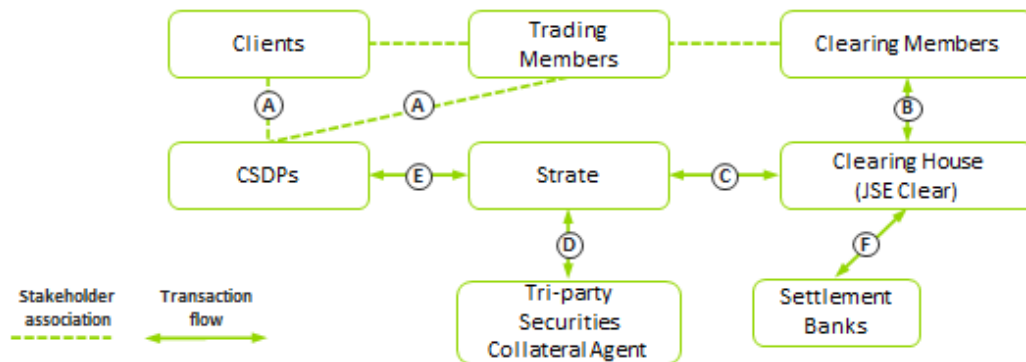
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- **Background**
 - Initial Margin (IM) requirements is calculated as part of the daily EOD process and settled on T+1 and is payable in ZAR-cash only.
 - The acceptance of securities collateral by JSE Clear, will allow members to meet their IM requirements through a combination of ZAR cash and liquid South African fixed rate government bonds.
- **Securities collateral will be offered in the following markets for Bond CCP**
 - Interest Rate Derivatives and cleared Bond CCP trades
- **Securities Collateral Value Proposition**
 - Reduce liquidity pressures and funding costs for derivative market participants in an environment of increasing regulatory capital requirements and other cost pressures
 - Alleviate liquidity pressures in times of market stress when margins inevitably increase
 - Mitigation of the concentration risk that arises from the CCP investing the margins it receives from clearing members for derivative exposures back with the same institutions

- **Eligible securities**
 - Initial phase - liquid South African government bonds
 - Later phases - equities will be considered
- **Obligations for which securities collateral will be accepted**
 - Initial margin (including the margin add-on's)
 - Clearing member default fund contributions will be catered for in a later phase
 - Note:
 - Additional margin required by Clearing Members on top of the CCP margin call will not be able to be covered by securities via the JSE Clear collateral solution
 - Variation Margin will remain payable in ZAR cash
- **A minimum percentage of the IM obligation will still need to be settled in ZAR cash**
 - Initially this will be 65% i.e., up to 35% of the IM obligation can be collateralized through securities



Associations and transaction flows:

- A) Clients and Trading Members to open an independent collateral giver account or trading collateral giver account at STRATE via their CSPDs for the pledging of securities collateral
- B) Initial margin amounts confirmed by JSE Clear with Clearing Members as part of the daily end-of-day process
- C) Allowable securities margin amount sent to Strate per Client and Trading Member for securities collateralisation
- D) Strate will allocate or release securities as available in Client and Trading Member independent collateral giver account
- E) CSDPs are required to commit to all security pledges and release requests for them to be valid (automated process)
- F) JSE Clear to determine remaining cash amount required (i.e. total margin required less pledged securities) and once clearing members confirm the cash breakdown cash settlements are done via the settlement banks



Position holders (Trading members and clients) will pledge securities directly to JSE Clear for their exposures



The 'pledge' mechanism (as opposed to 'cession') will be used for securities collateral

Separate Collateral Giver

- Manual intervention required for:-
- Sales and stocks impacted corporate events
- Transfer of eligible stock between accounts

TRADING ACCOUNT



COLLATERAL GIVER

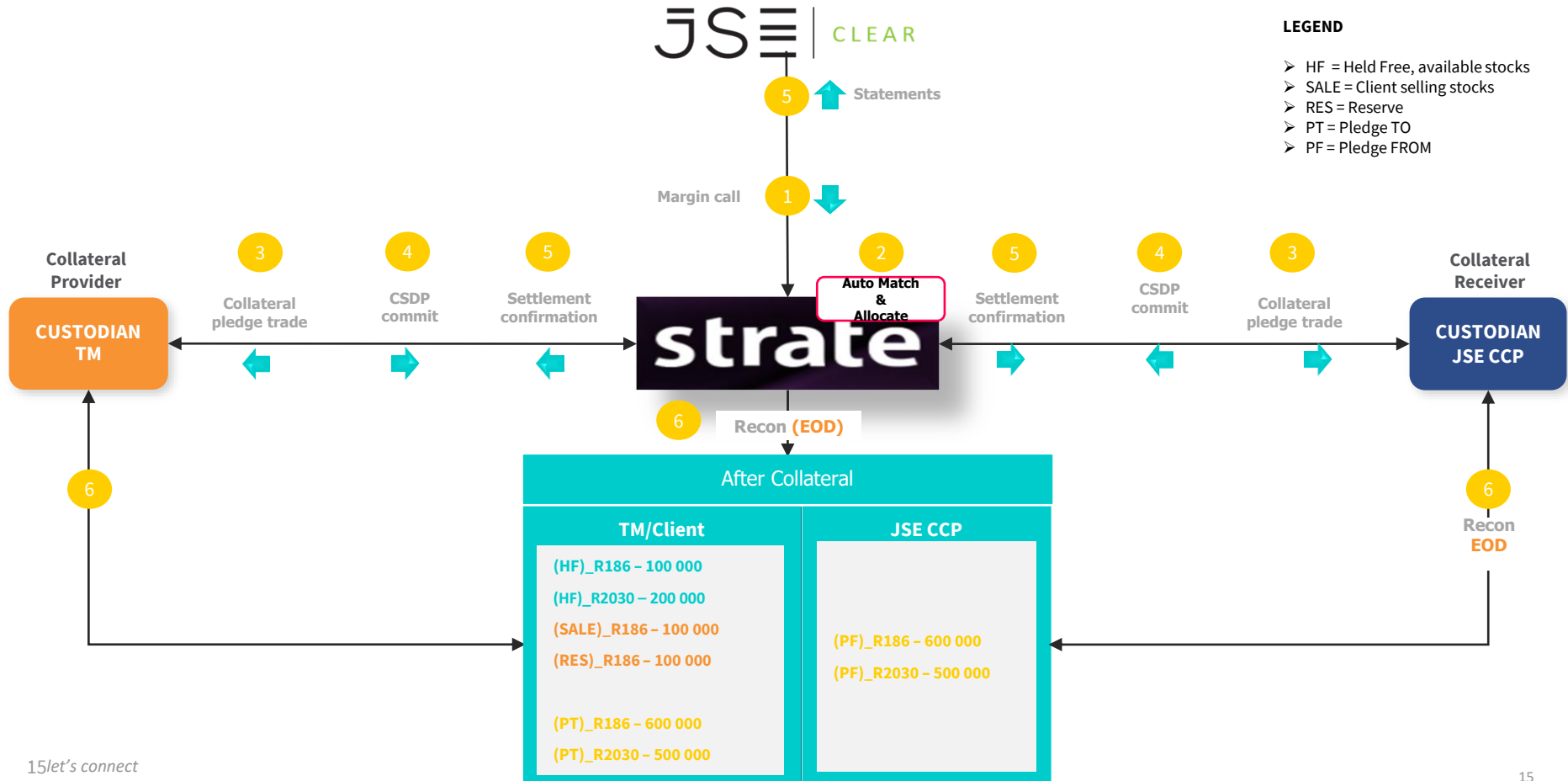


Single account Trading and Collateral Giver

- No manual intervention required
- Automatic recalls and substitution for sales/corporate events
- Automatic eligibility check

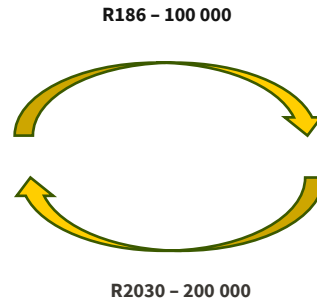
TRADING & COLLATERAL GIVER





- What happens if a stock is allocated as collateral and sold by the client
 - Bond stock being sold will be substituted with another eligible stock

Before Substitution	
TM/Client	JSE CCP
(SALE)_R186 - 100 000	
(RES)_R186 - 100 000	
(HF)_R186 - 200 000	
(HF)_R2030 - 200 000	
(SALE)_R2030 - 400 000	
<hr/>	
(PT)_R186 - 700 000	(PF)_R186 - 700 000
(PT)_R2030 - 500 000	(PF)_R2030 - 500 000



After Substitution	
TM/Client	JSE CCP
(SALE)_R186 - 100 000	
(RES)_R186 - 100 000	
(SALE)_R2030 - 400 000	
(RES)_R2030 - 400 000	
(HF)_R186 - 100 000	
<hr/>	
(PT)_R186 - 800 000	(PF)_R186 - 800 000
(PT)_R2030 - 300 000	(PF)_R2030 - 300 000

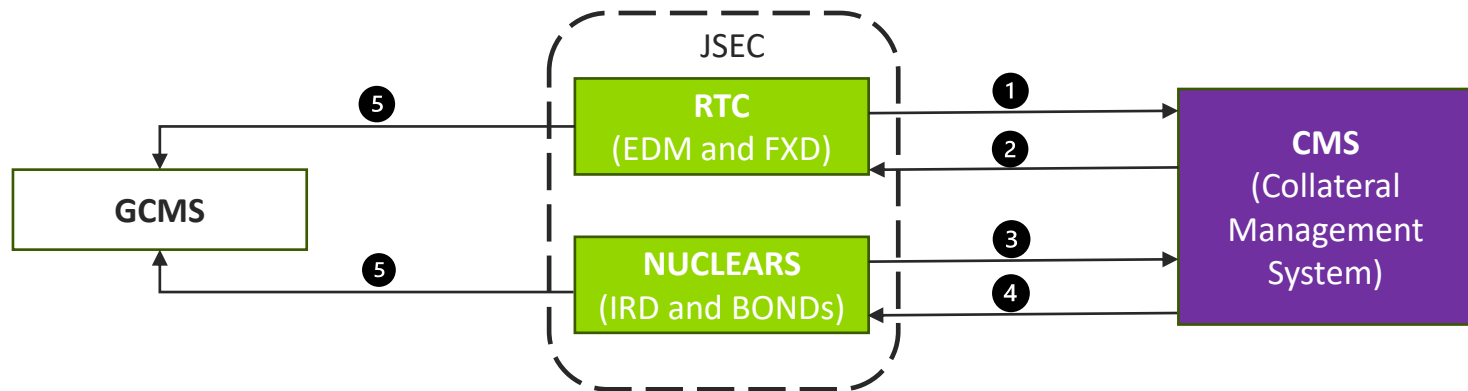
- Exposure value increase
 - Additional collateral will be placed
- Exposure value decrease
 - Collateral will be withdrawn and returned to the TM/client

Before Top-up	
TM/Client	JSE CCP
(HF)_R186 - 100 000	
(SALE)_R186 - 100 000	
(RES)_R186 - 100 000	
(SALE)_R2030 - 400 000	(PF)_R186 - 800 000
(RES)_R2030 - 400 000	(PF)_R2030 - 300 000
(PT)_R186 - 800 000	
(PT)_R2030 - 300 000	

After Top-up	
TM/Client	JSE CCP
(HF)_R186 - 50 000	
(SALE)_R186 - 100 000	
(RES)_R186 - 100 000	
(SALE)_R2030 - 400 000	(PF)_R186 - 850 000
(RES)_R2030 - 400 000	(PF)_R2030 - 300 000
(PT)_R186 - 850 000	
(PT)_R2030 - 300 000	

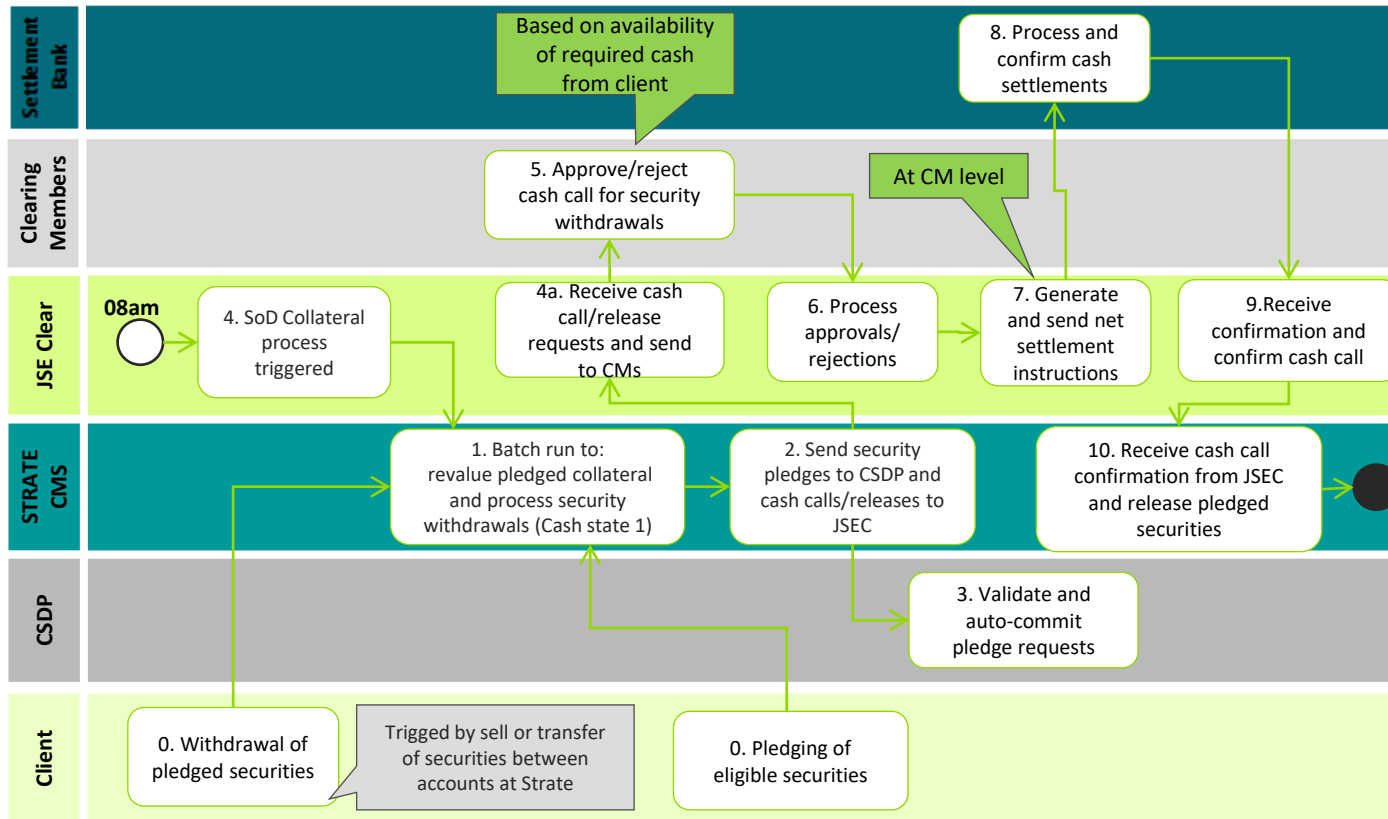
After Withdrawal	
TM/Client	JSE CCP
(HF)_R186 - 200 000	
(SALE)_R186 - 100 000	
(RES)_R186 - 100 000	
(SALE)_R2030 - 400 000	(PF)_R186 - 700 000
(RES)_R2030 - 400 000	(PF)_R2030 - 300 000
(PT)_R186 - 700 000	
(PT)_R2030 - 300 000	

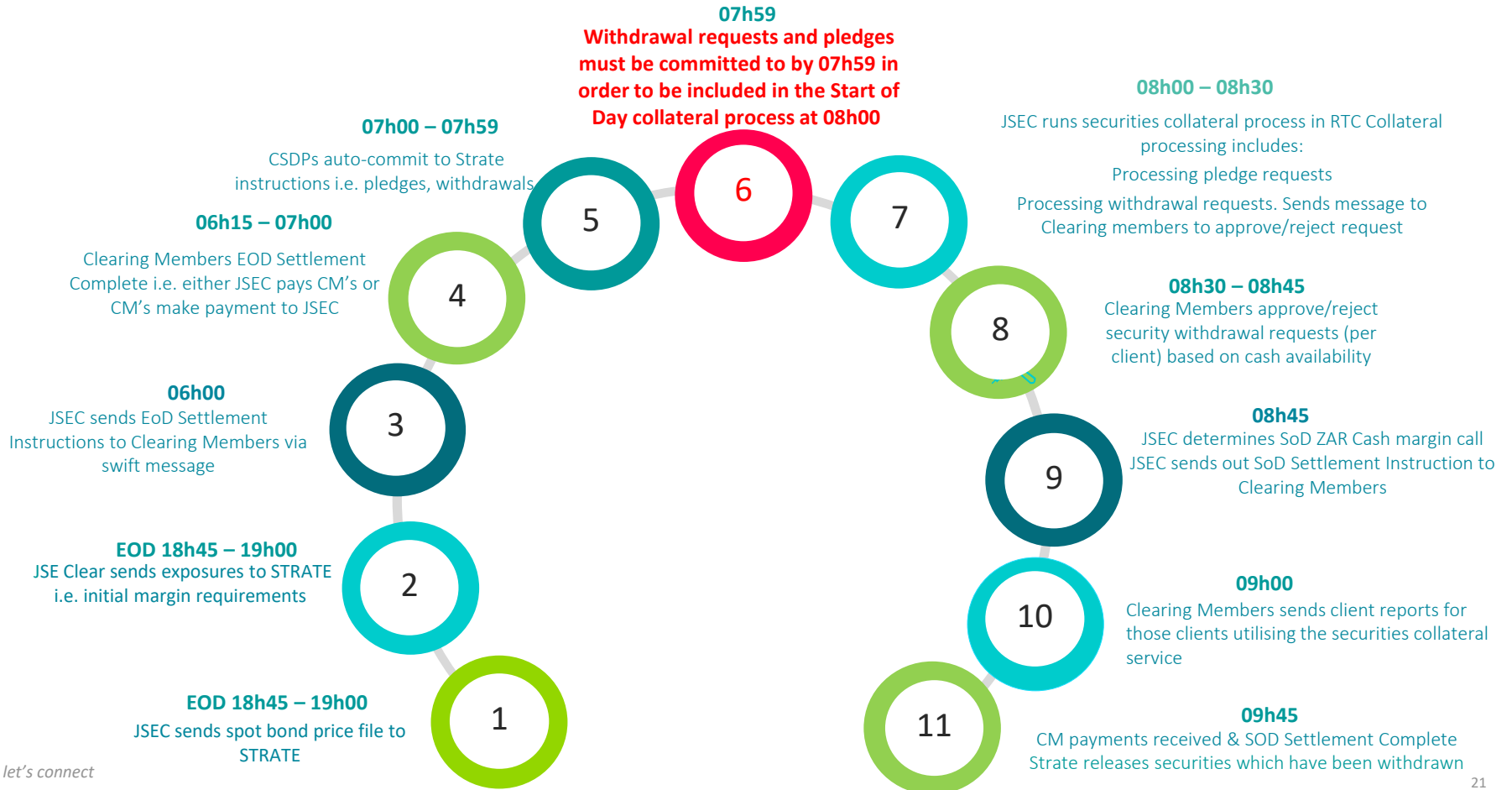
- Withdrawal requests will be processed once a day during the SOD collateral process
- Clearing Members will be required to approve/reject withdrawal requests
- Securities on the back of the withdrawal request will be released only once the Clearing Member's cash settlement including the cash covering the value of the security to be withdrawn is physically in JSEC's account
- Thereafter, JSEC will instruct Strate to release the securities
- Security withdrawal requests received after 8am will only be processed during the SOD collateral process the following business day
 - Clients will need to be aware of this and manage their collateral accordingly and CMs will need to timeously process withdrawal request approvals



Transaction flows

1. JSEC sends eligible securities, closing prices and maximum allowable securities value for Equity and Currency Derivative markets to Strate
2. Strate sends back an acknowledgement of receipt
3. JSEC sends eligible securities, closing prices and maximum allowable securities value for Interest Rate Derivatives and Bonds markets (cleared bonds CCP trades) to Strate
4. Strate sends back an acknowledgement of receipt
5. Publishing of daily settlement values, for settlement on T+1





- **The following criteria will be used to determine which bonds form part of the list of eligible securities:**
 - Nominal value in issue greater than R100 billion
 - Average daily value traded (ADVT) of more than R500 million
 - Term to maturity greater than 6 months
 - Ability to value the security and determine the valuation haircut and concentration limits
 - Availability of data to support these functions

- **Eligible collateral will be reviewed quarterly and ad hoc as required**

Current list of eligible SA Govi bonds based on the eligibility criteria above with indicative haircuts

ISIN	Alpha Code	Haircut (%)
ZAG000016320	R186	6.96
ZAG000106998	R2030	8.32
ZAG000077470	R213	8.98
ZAG000125980	R2040	9.08
ZAG000107004	R2032	9.3
ZAG000125972	R2035	9.53
ZAG000107012	R2037	9.72
ZAG000030404	R209	10.32
ZAG000106972	R2044	10.59
ZAG000096173	R2048	10.87

- **Valuation and haircuts:**

- In determining the sufficiency of the cash and securities posted to cover IM obligations, JSEC will value the securities pledged to JSE Clear at their market value less any haircut applicable.
- JSE Clear will mark these securities to market on at least a daily basis and will adjust the amount of cash to be paid to (or from) JSE Clear from (or to) market participants to cover their remaining initial margin requirements.
- The haircuts will be calculated to account for market volatility of each security
- Haircuts will be reviewed at least quarterly for appropriateness and more frequently should JSE Clear so require.
- Market participants will be notified of applicable haircuts and any changes thereto.

- **Concentration Limits (under consideration)**
 - JSE Clear will impose limits on the aggregate amount of a particular security per clearing member and clearing members may set account level limits
 - Limits are set for the following reasons:
 - I. to avoid undue concentration of collateral in a particular asset class, type of security, obligor, etc.
 - II. to restrict the maximum amount of non-cash collateral a market participant may pledge to JSE Clear for its margin requirements in respect of its position
 - Limits will be based on liquidity of the security

- In the event of a default, all securities pledged to JSEC will be liquidated into ZAR cash via a JSEC appointed broker, over and above the standard default management process
- Securities collateral will only be accessed/sold in the event of a default
- Securities will be liquidated within a maximum of 2 days from the time of the default
Haircuts and concentration limits are quantified accordingly i.e. based on a 2-day liquidation period
- The settlement cycle of the trades booked to liquidate securities may vary from same day settlement to T+3 settlement
- Proceeds from the sale of collateral may therefore be received from DD to DD+4 (where DD is Default Day)

Role

- Users of the securities collateral service

Impacts

- Onboarding process
 - Clients would be required to open an independent collateral giver account or trading collateral giver account at STRATE and follow the STRATE onboarding process
 - Clients would require a CSDP account
 - Clients would need to update their derivatives account details to include their STRATE account details i.e. STRATE code
 - A new field to indicate the take up of the service will be available on a clients/TM account
- Pledging/withdrawing of securities
 - Clients need to ensure that withdrawal requests are done timeously with due consideration given to their respective CSDP commit process

Note: Security withdrawals must be committed to by 07h59. Withdrawals will only be processed once a day

Reporting

Clients that utilise this service will receive an additional set of reports after the Start of Day securities collateral process has run at approximately 9am (with final ZAR cash IM amount to be settled)

Conclusion and next steps:

- JSE to continue with the detailed design and requirements of the CCP with targeted completion in Q3 this year.
- Market participants to review the CCP design and requirements shared thus far and engage directly with JSE on any questions or queries they may have.
- Market participants to start mobilising their internal teams to commence internal design and system development work in Q3 2023.

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- Settlement management ✓
- Risk management and margining ✓
- Fees and billing
- Reporting
- Default management ✓
- Clearing membership criteria ✓
- CCP rules, policies and procedures

Thank you

Q&A

...for further info or questions, please contact:

Hemash Kala (Project lead) – Hemashk@jse.co.za

Teresa Kloppers (Project manager) – Teresak@jse.co.za

Alicia Greenwood (CEO JSE Clear) – Aliciag@jse.co.za ; or



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Appendix

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- The existing JSE Clear clearing membership requirements will be applicable for clearing of bonds and repos.
- A few additional requirements for clearing bonds and repos will be applicable e.g. clearing members must have an arrangement with National Treasury to be the lender of last resort to fulfil client settlement obligations.

NB. A final list of all additional membership requirements will be published in due course.

JSE Clear currently provides clearing membership for three types of entities:

**A Bank / branch
of a Foreign Bank**

(regulated by the
Prudential Authority)

**A subsidiary of a
Bank or a Foreign
Bank**

(latter must be in a
jurisdiction that
adheres to BASEL)

**An Exchange
Member
(Non-bank)**

(prudentially
regulated by the
exchange)

The CCP will only clear products that have sufficient liquidity and daily trading volumes over a certain limit. This is to ensure that the CCP has the ability adequately liquidate positions in the event of a clearing member default.

Phase 1

Cash bonds:

- **Spot bond types:**
 - SA Government Nominal bonds
 - SA Government Inflation linked bonds
- **Settlement date:** T0 to T+n

Bond repos:

- **Reference bonds:**
 - SA Government Nominal bonds
- **Repo type:** Buy-Sell back
- **Repo rate:** Fixed rate
- **Start settlement date:** T0 to T+n
- **Returns settlement date:** T1+ T+n

NB: Classic repo may be included in phase 1.

Phase 2 (Indicative)

Cash bond :

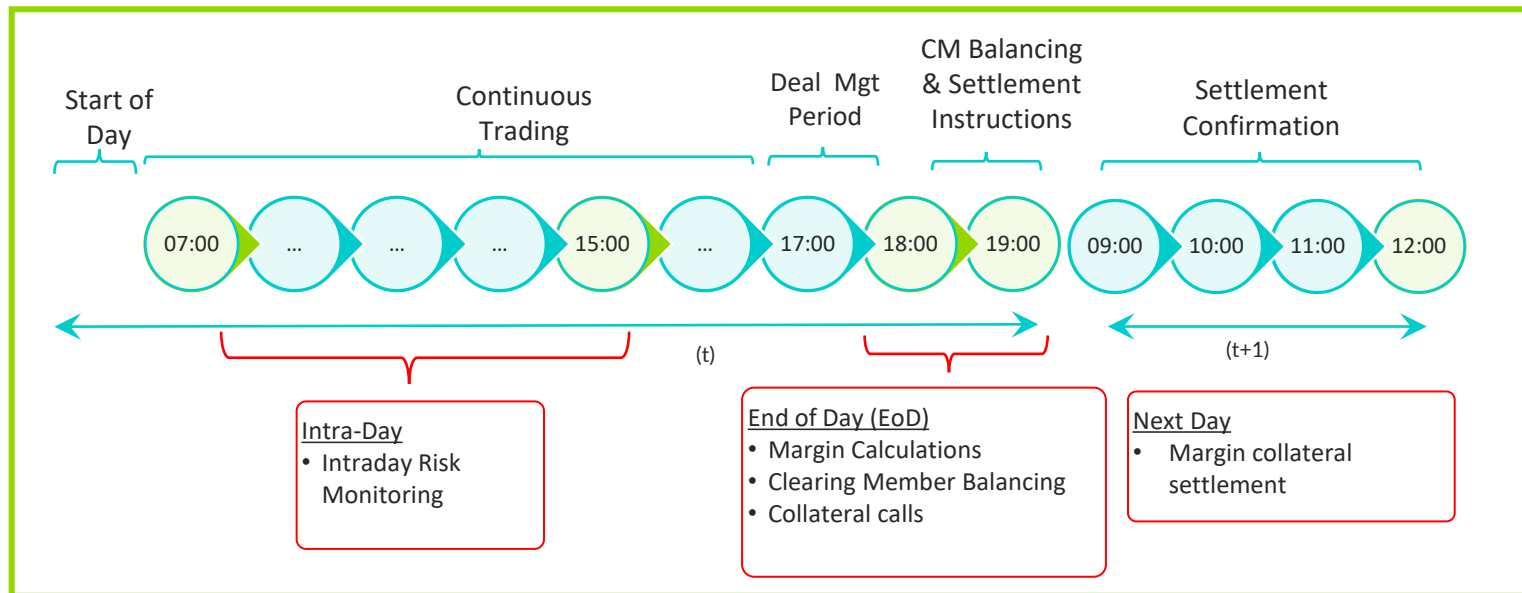
- **Spot bond types:**
 - Other Issuer segments e.g SOEs

Bond repos:

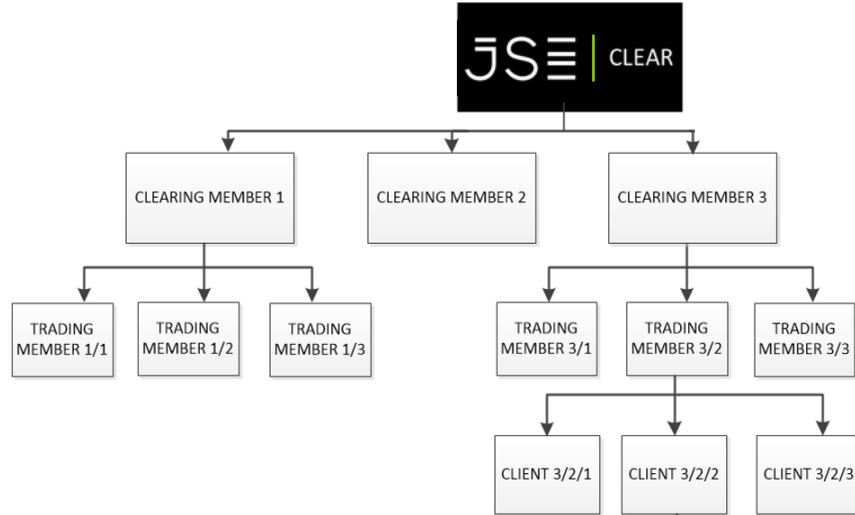
- **Reference bonds:**
 - SA Government Inflation linked bonds
- **Repo type:** Classic Repo & Open-ended repo, GC Baskets, Tri-partied repo
- **Repo rate:** Floating rate

Two core risk management processes are conducted daily by the CCP

1. **EOD margin run** : Each day JSE Clear will run a single End-of-Day (EOD) margin run for all markets. Margin calls are required to be settled by clearing members on T+1 (by 12:00pm).
2. **Intra-day margin run**: Additionally in extreme volatile markets JSE clear may elect to run an adhoc intraday margin call. Intraday margin call take place during the trading day and must be settled in cash before 15:00pm.



- In a **client default** the Trading member must meet the obligations of the defaulted client
- In a **trading member default**, the clearing member must meet the obligations of the defaulted trading member
- In a **clearing member default**, the defaulted clearing member's portfolio is closed out through the default auction or other mechanisms and the prefunded resources in the risk waterfall are used to settle the obligations of the defaulted clearing members



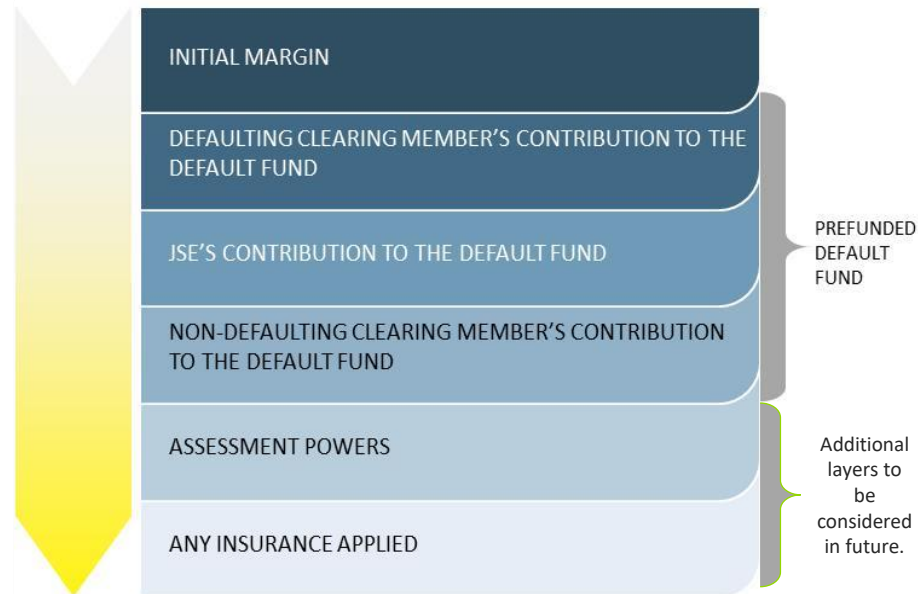
1) All initial margin, additional margin and/or other collateral held by JSE Clear in favour of or on behalf of or for the account of the clearing member is used first to settle any obligations the clearing member has to the market.

2) Should these be insufficient to cover all obligations, the defaulting clearing member's contribution to the JSE Clear Default Fund is used.

3) Thereafter, JSE Clear's contribution to the JSE Clear Default Fund is used.

4) If any obligations to the market remain thereafter; the non-defaulting clearing members' contributions to the JSE Clear Default Fund are utilised.

5) Should the defaulting clearing member have any obligations to the market that are not covered by the financial resources listed above, affected market participants will have a claim against the defaulting clearing member.



Default

When a Client, TM or CM is unable to meet their margin obligations to the CCP

Settlement failure

When a Client or TM is unable to meet their trade settlement obligations (stock if selling, cash if buying) their counterparty on S