RCP PAPER NO.   :      **EMC/RCP/XX/2019/CP77**

SUBJECT        :      **REVIEW OF CREDIT SUPPORT REQUIREMENTS IN ALIGNMENT WITH THE LEAD TIME FOR TRANSFERS DURING A RETAILER OF LAST RESORT EVENT**

FOR        :      **CONSULTATION**

PREPARED BY   :      **AIKO LEE**
                    **ECONOMIST**

REVIEWED BY   :      **VERONICA RODRIGUEZ**
                    **SVP, MARKET ADMINISTRATION**

DATE OF MEETING :

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## Executive Summary

This paper reviews the adequacy of the current credit support requirements in view of the lead time for customer transfers during a Retailer of Last Resort (RoLR) event. There are two issues that surfaced during the review:

(i)      Whether to procure credit support based on the **<u>average</u>** number of days of exposure ("average coverage") or the **<u>maximum</u>** number of days of exposure ("maximum coverage"); and

(ii)     Insufficient credit support coverage arising from the transfer lead time associated with a RoLR event.

The paper first quantifies the cost of maintaining the status quo, followed by proposing several options to address the issues:

(i)      Maintain the status quo;

(ii)     Increase credit support requirements to either **35 days** (average coverage) or **38 days** (maximum coverage);

(iii)    Commence transfer process earlier, which involves increasing credit support requirements to either **33 days** (average coverage) or **36 days** (maximum coverage); and

(iv)    Backdate the default supply effective date.

We would like to seek the views of any interested party on this paper. We would also like to seek SP Services' inputs and cost/time estimates for Options 3 and 4.

We would appreciate receiving comments by **<u>31 Dec 2018</u>**.

## 1.    Introduction

This paper assesses the proposal to review the current credit support requirements imposed on market participants (MPs) in the Singapore Wholesale Electricity Market (SWEM) in view of the lead time for customer transfers in a Retailer of Last Resort (RoLR) event.

## 2.    Background

### 2.1    Full Retail Contestability

This review takes place against the backdrop of:
(i)     a progressive liberalisation of the retail electricity market, whereby all consumers (including households and small commercial or industrial consumers previously classified as non-contestable) can have the choice of their electricity retailer, and
(ii)    an increase in the number of independent retailers[1], likely facilitated by the electricity futures market.

While the above developments are beneficial for electricity consumers, they may bring the following risks:
(i)     an increase in the number of consumers affected by a given retailer's failure, and
(ii)    an increase in the aggregate net exposure in the SWEM since independent retailers are unable to net off their exposure using bilateral contracts with other MPs if they hedge using electricity futures.

These risks amplify the importance of addressing any gaps or inadequacy in the current credit support requirements.

### 2.2    Current Prudential Requirements in the SWEM

The underlying rationale for the provision of credit support by net debtors in the SWEM is so that each debtor in the market provides for its own default risk arising from its trading exposure. This in turns lowers the credit risk faced by sellers, reducing the need for them to factor in a credit risk premium in their offer prices.

Prudential requirements set out in the current market rules stipulate that every MP that intends to participate in the SWEM needs to provide and maintain credit support with EMC that is no lesser than its credit support value (CSV). The CSV is computed as follows:

Credit Support Value = Estimated Average Daily Exposure (ADE) * 30 calendar days;

where ADE = -1 * average of net settlement amounts set out on the 90 most recently available Preliminary Settlement Statement (PSS) or corresponding Final Settlement Statement (FSS) (if available).

As per the formula above, credit support would be required from net debtor MPs (since they will have negative net settlement amounts).

The current credit support requirement is based on a MP's expected **average** trading exposure over a 30-day period, which covers the 20-day settlement/payment cycle and a 10-day default remediation and suspension process, illustrated in Figure 1 below. In practice, though, an MP's actual exposure on any given day could span between **29 to 32 days** depending on the presence

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[1] Independent retailers refer to retailers without affiliated generation companies.

of weekends and public holidays. Please refer to Appendix A for the distribution of the number of days of actual exposure in the year 2018.

**Figure 1: Basis for Current Credit Support Requirement[2]**
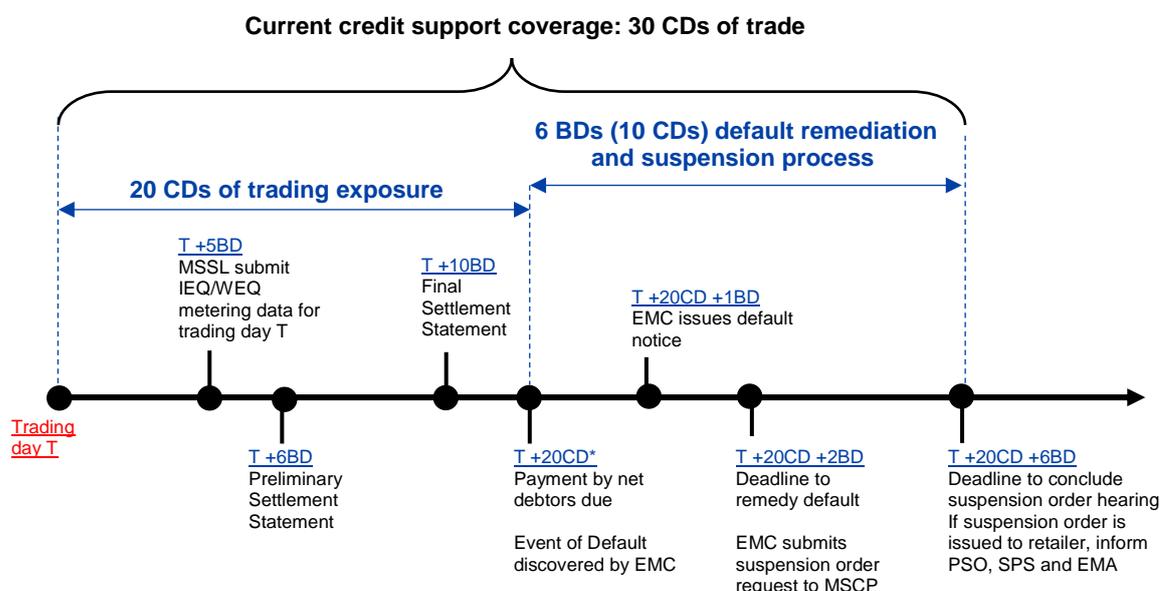


*Note that "T +20CD" should more accurately be <u>T +20CD, subject to business day convention</u>. For ease of reference, references to "T +20CD" in this paper refers to T +20CD, subject to business day convention, i.e. the MP Payment Date.

## 2.3    RoLR Event Triggers

Under normal circumstances, a retailer which wishes to exit the market will arrange for the continuation of electricity supply purchase for its customers with another retailer. Notwithstanding, provisions need to be made for cases where a retailer exits the market without making such prior arrangements to ensure supply purchase continuity for its customers in the event of retailer's failure. These provisions are contained in the RoLR framework.

The issuance of a suspension order or termination order by the Market Surveillance and Compliance Panel (MSCP) (by T +20CD +6BD as illustrated in Figure 1) to the effect that an MP is unable or not allowed to retail electricity is defined in the Code of Conduct for Retail Electricity Licensees[3] as one of the RoLR events, which will trigger the RoLR process.

## 2.4    RoLR Framework and Transfer Lead Time

The RoLR framework was recently reviewed by the EMA[4] in preparation for the launch of full retail contestability in Singapore (also referred to as the "open electricity market").

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[2] Specifically, for the default remediation and suspension process:
Chapter 2 section 9.2.1.1 – EMC to issue default notice within 1 BD of the MP payment date
Chapter 3 section 7.3.3 – Defaulting MP required to remedy the event of default within 1 BD
Chapter 3 section 7.3.10.2 – EMC to request MSCP to issue suspension order
Chapter 3 section 7.3.11 – MSCP to conclude hearing within 4 BDs following the date of receipt of the request for suspension order to be issued
[3] https://www.ema.gov.sg/cmsmedia/Code%20of%20Conduct%20for%20Retail%20Electricity%20Licensees_Nov%202018.pdf (Version: November 2018)

[4] The RoLR framework was recently reviewed by the EMA in preparation for the launch of full retail contestability (also referred to as the "open electricity market") in Singapore. For example, in the EMA's "Modifications to the Code of Conduct for Retail Electricity Licensees" Decision Paper, dated 18 October 2018 (https://www.ema.gov.sg/cmsmedia/Decision_Paper_Code_of_Conduct_for_Retail_Electricity_Licensees.pdf)

Under the revised RoLR framework, upon a RoLR event being triggered, the MSSL (currently SP Services (SPS)) will carry out the customer transfer arrangements to transfer the defaulting retailer's customers to other retailers or MSSLs. A consumer is deemed to have agreed to purchase electricity from the MSSL with effect on and from the date on which the MSSL successfully transfers them to the default supply arrangement (hereafter referred to as the "default supply effective date"), unless the consumer contracts with and is successfully transferred to another retailer or MSSL prior to the default supply effective date.[5]

The default supply effective date is the **4th business day (BD) from the date of the trigger of the RoLR event**, which implies a 3 BD lead time (hereafter referred to as the "transfer lead time").

Figure 2 below illustrates the RoLR triggers and related processes.

**Figure 2: Triggers and processes in relation to a RoLR event**
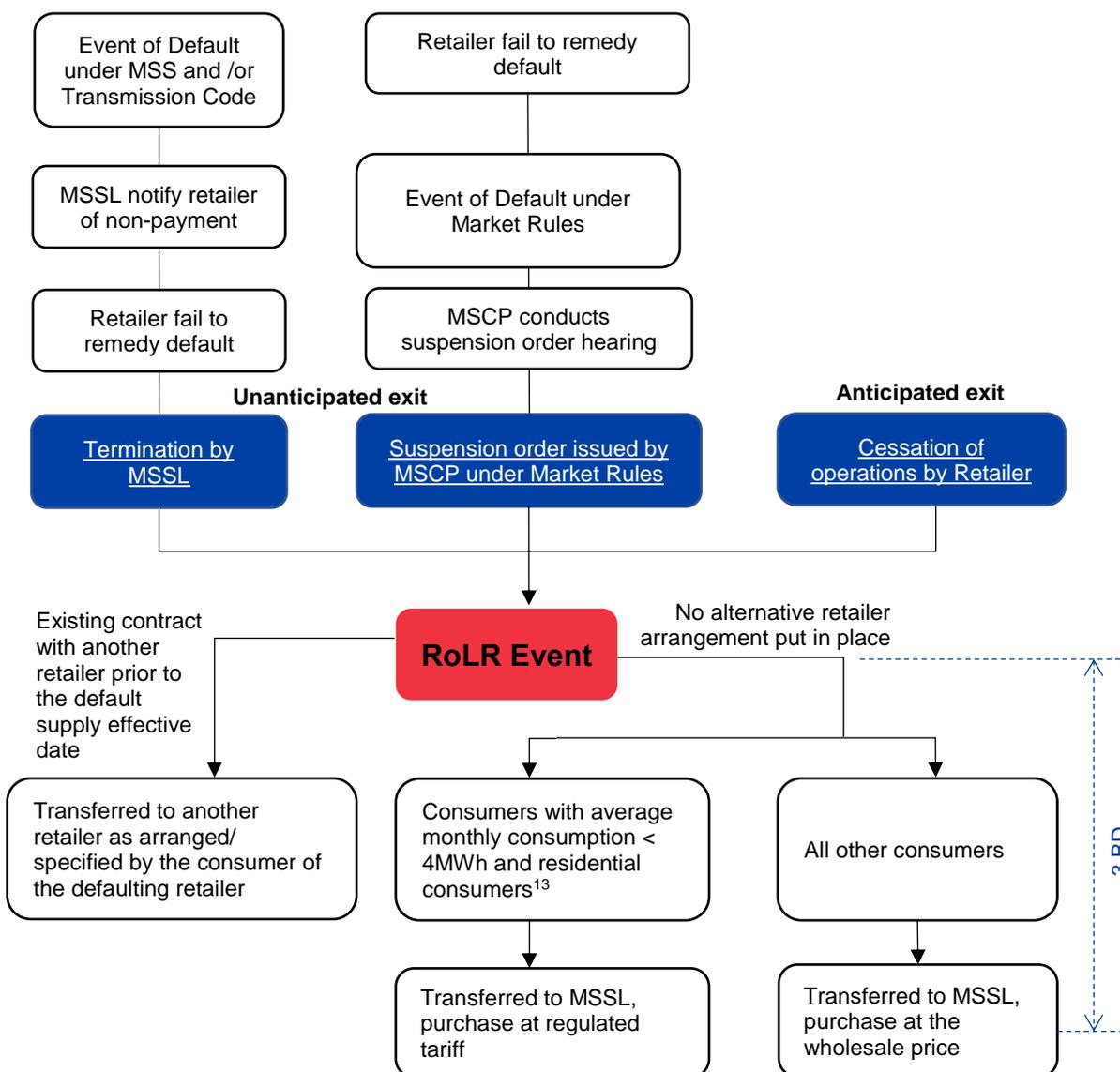


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## 2.5 Issues with Current Arrangements

Under the current arrangements, the potential insufficiency of credit support could be contributed by three factors:

- Issue 1: Insufficient credit support coverage relative to actual exposure (e.g. requirement of 30 days versus actual exposure of up to 32 days)

- Issue 2: Insufficient credit support coverage due to transfer lead time

- Issue 3: Deviation between actual exposure and average daily exposure (e.g. requirement based on 90-day average daily exposure versus actual exposure)

This paper address Issues 1 and 2, which deals with the number of days of exposure, but will not address Issue 3, which deals with the estimation of an MP's daily exposure.

### 2.5.1 Issue 1

As mentioned in section 2.2, although the actual exposure on a given day ranges from 29 to 32 days, the current credit support requirement is set based on a 30-day exposure to reflect the **average** number of days of exposure ("average coverage"). This means that on a given day, there is the possibility that the credit support required is less than the actual exposure of MPs even without fluctuations in an MP's daily exposure or a transfer lead time.

An alternative arrangement could be to set the credit support requirement based on the **maximum** possible number of days of trading exposure ("maximum coverage"). This arrangement exercises a higher prudence in procuring credit support, but at the expense of a higher costs to the market.

### 2.5.2 Issue 2

The current 30-day credit support requirement assumes that a defaulting retailer stops chalking up exposure in the SWEM upon conclusion of the MSCP's suspension order hearing (i.e. no more trading exposure on and from the day immediately after T +20CD +6BD, at the latest).

However, as mentioned in section 2.4, the current RoLR processes entail a transfer lead time of 3 BDs, where customer transfers away from the defaulting retailer will only take effect on the 4th BD after a RoLR event (such as the issuance of a suspension order by the MSCP).

The metered withdrawals of the defaulting retailer's consumers during the transfer lead time continue to be tagged to the defaulting retailer. The current 30-day credit support requirement is therefore **insufficient to fully cover the expected trading exposure of a MP** until the trading day that such MP ceases to chalk up exposure in the SWEM, since the MP's aggregate trading exposure will span approximately **34 to 38 days** (refer to Appendix A for the distribution of actual exposure under such a scenario in the year 2018).

Figure 3 below illustrates the steps (Steps A, B, and C) undertaken during the transfer lead time.

**Figure 3: RoLR transfer lead time**
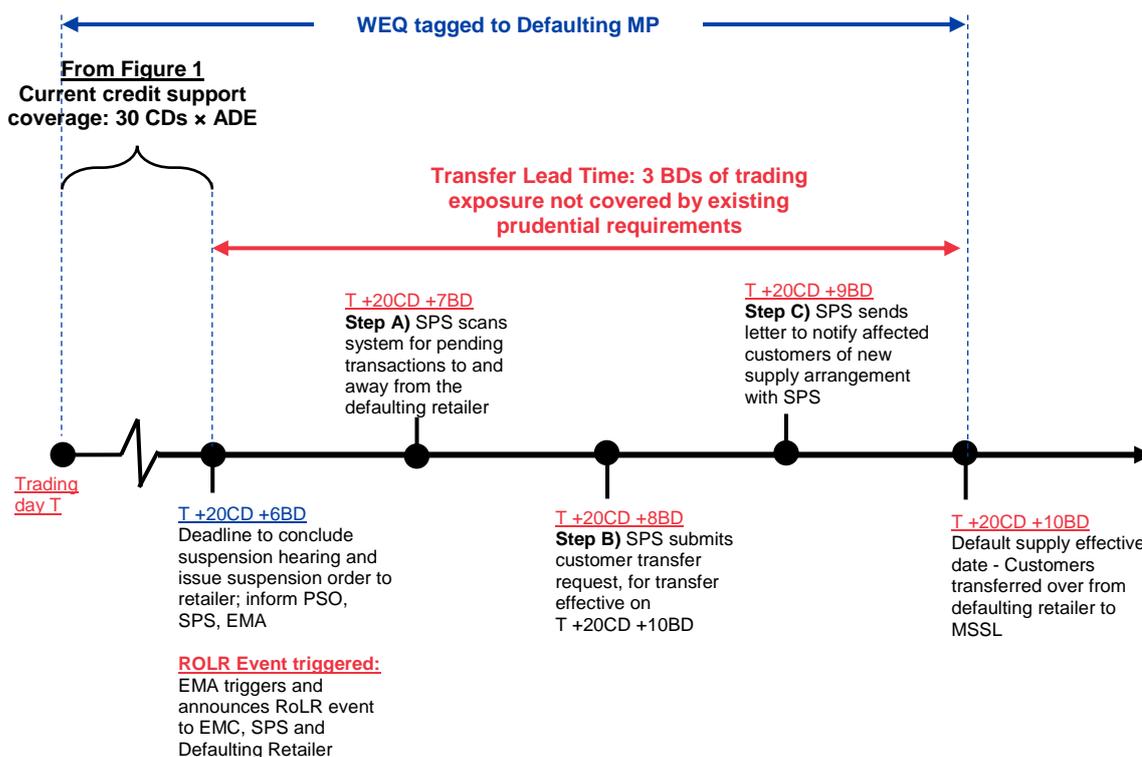


## 3. Analysis

This section explores and assesses various options that can potentially be adopted to address Issue 2. Where applicable, for each option, we present the proposed increase in credit support requirements based on both (i) average coverage and (ii) maximum coverage (as mentioned in Issue 1).

### 3.1 Option 1: Maintain the status quo

Any shortfalls in settlement amounts (due to a default in payment by an MP), which cannot be covered by credit support held by the EMC in respect of that MP, is currently borne by all non-defaulting MPs via a default levy[7].

Maintaining the status quo (i.e. not increasing the current 30-day credit support requirement) means that it is very likely for credit support to be insufficient upon the occurrence of a default since an MP is only required to cover its 30-day exposure but would incur <u>up to 38 days</u>[8] of exposure (due to both Issues 1 and 2). Correspondingly, this increases both the likelihood and quantum of shortfalls in settlement amounts leading to the need for imposition of default levies.

To quantify the cost of maintaining the status quo, we evaluated the sufficiency of each net debtor MP's credit support in the event that such MP defaulted on its payment for trading day T. Any shortfalls which cannot be covered by credit support constitutes a cost to the market.

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[7] We note that there is an ongoing review for the default levy to be allocated only to market creditors in Concept Paper 76.

[8] Under the worst-case scenario where there are public holidays during the 10 BD period (from MP Payment Date to default supply effective date).

For each MP Payment Date (occurring on T +20CD), each net debtor MP's <u>aggregate net settlement amount</u> for the entire duration (from Day T to MP Payment Date +10BD -1CD)[9] is compared with the <u>amount of credit support</u> held by EMC in respect of the MP on the MP Payment Date[10]. Specifically, for each net debtor:

$$\text{Shortfall Amount (9BD)}_{T+20CD} = \sum_{T}^{T+20CD+10BD-1CD} \text{Net Settlement Amount} - \text{Credit Support Held}_{T+20CD}$$

The shortfall amount assuming the absence of the transfer lead time is also computed based on the following formula. This amount shows the insufficiency of credit support even in the absence of the transfer lead time.

$$\text{Shortfall Amount (6BD)}_{T+20CD} = \sum_{T}^{T+20CD+6BD} \text{Net Settlement Amount} - \text{Credit Support Held}_{T+20CD}$$

Finally, while we observe that most MPs currently provide credit support in excess of the minimum 30-day requirement, it is not an obligation to do so. As such, we also computed the shortfall amounts based on the <u>minimum credit support amount</u> that is required from that MP[11], which would be a more conservative assessment.

$$\text{Maximum Shortfall Amount (9BD)}_{T+20CD} = \sum_{T}^{T+20CD+10BD-1CD} \text{Net Settlement Amount} - \text{Minimum Credit Support}_{T+20CD},$$

$$\text{Maximum Shortfall Amount (6BD)}_{T+20CD} = \sum_{T}^{T+20CD+6BD} \text{Net Settlement Amount} - \text{Minimum Credit Support}_{T+20CD},$$

where $\text{Minimum Credit Support}_{T+20CD} = 30 \times \text{ADE}_{T+20CD}$.

The following study was conducted for all MP Payment Dates from March to August 2018, i.e. all business days from March to August 2018. The average shortfall amount per net debtor MP[12], as well as the frequency of shortfall (out of 127 days) for the MP in the study period, are illustrated in Figures 4 and 5 below.

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[9] Representing the total exposure of a MP, as illustrated in Figure 3.

[10] Under current rules, the minimum amount of credit support provided on day T +20CD should be sufficient to cover the 20 days of trade from T to T +20CD, as well as the expected amount to be incurred from T +20CD to T +20CD +6BD, which is the default remediation and suspension process.

[11] Note that this ignores the other credit support requirement, which requires that an MP's estimated net exposure be less than 70% of the credit support provided.

[12] The average shortfall amount is averaged across MP Payment Dates where the shortfall amount is positive and excludes MP Payment Dates where the credit support is sufficient. All shortfall amounts calculated are floored at zero.

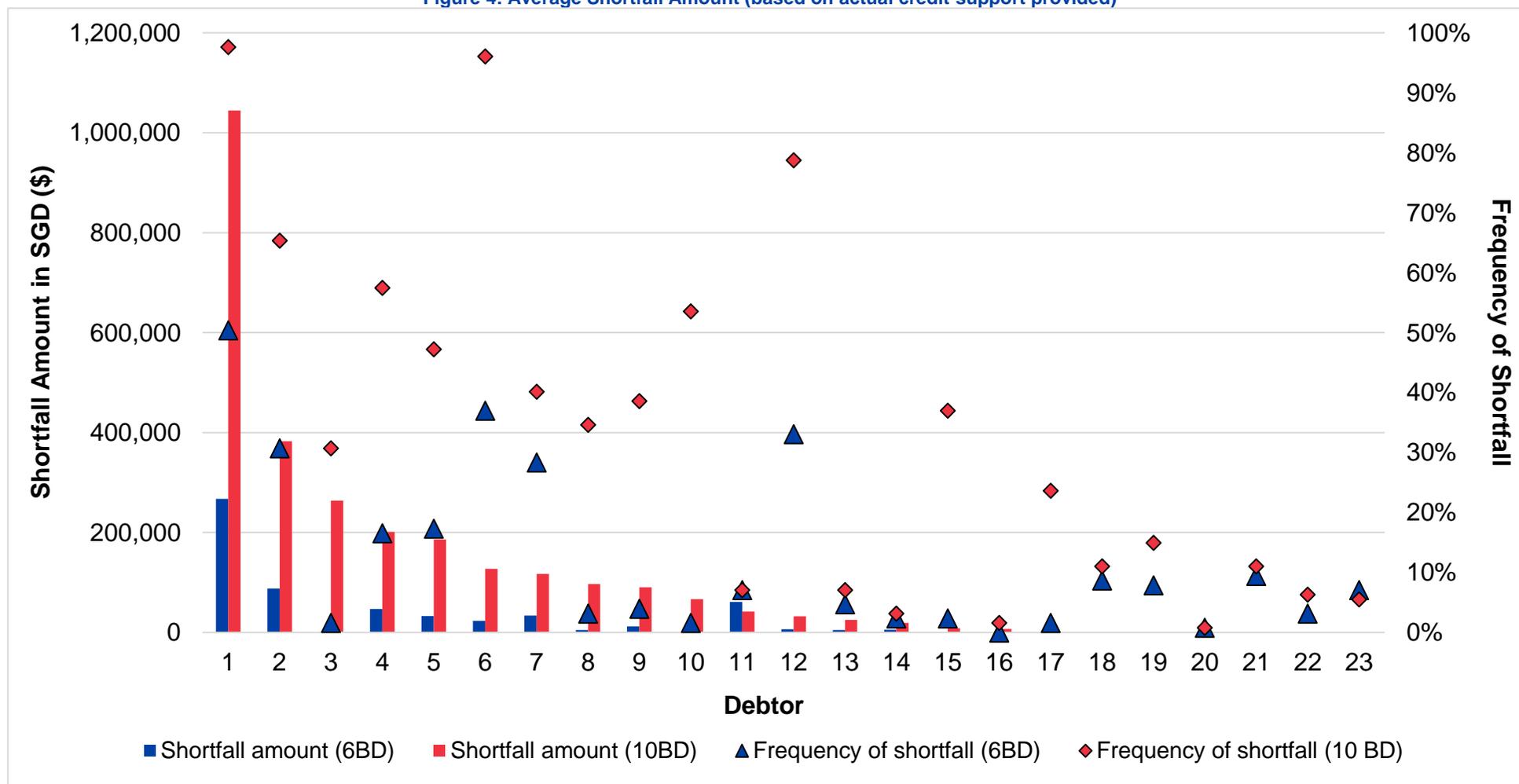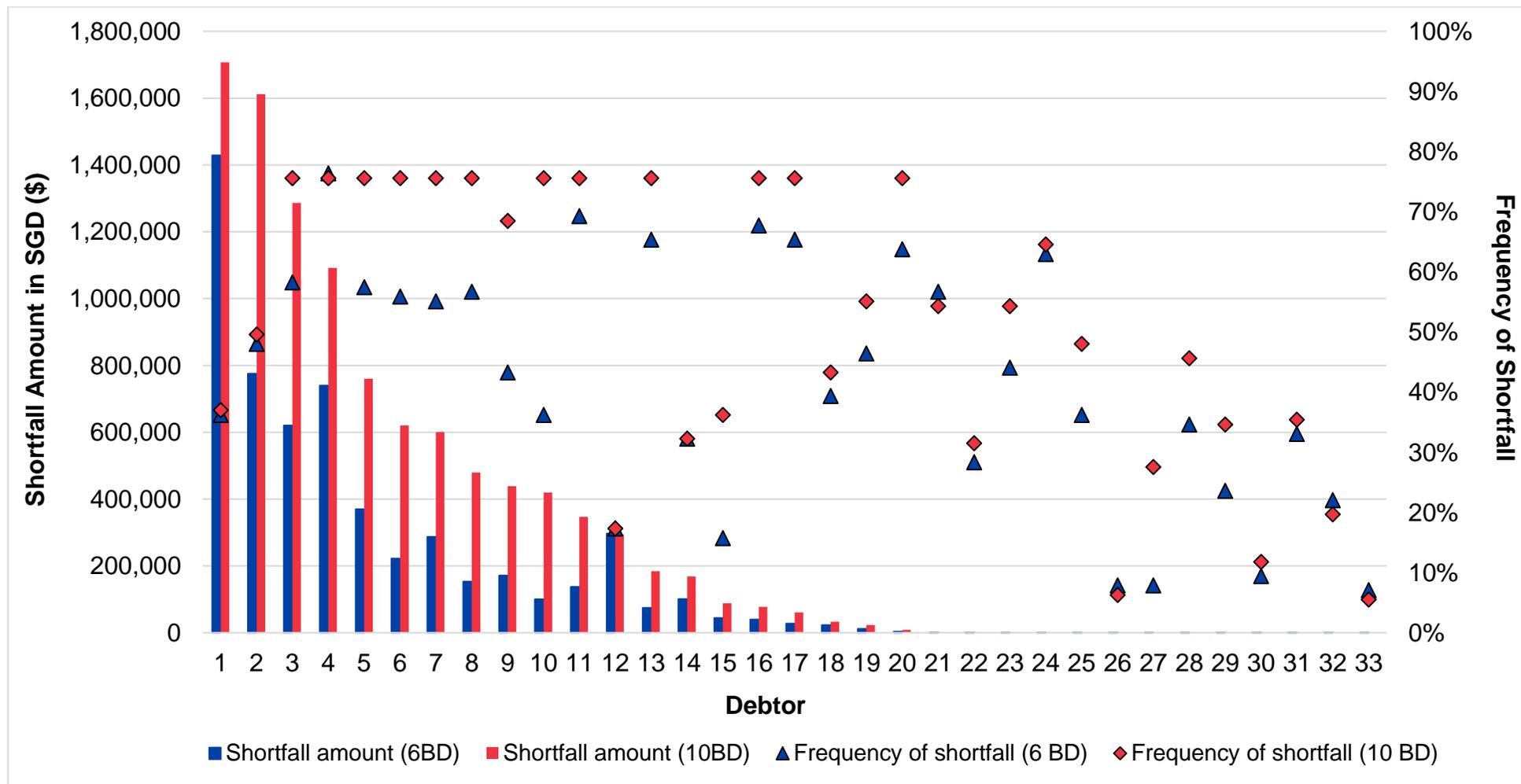Figure 4: Average Shortfall Amount (based on actual credit support provided)

Figure 5: Average Maximum Shortfall Amount (based on minimum credit support required)

From the study results, we observe that the exposure of the SWEM to a default varies widely, depending on the prevailing spot market prices as well as the size of the MP in question. Figure 4 shows that, had an MP defaulted on its payment on any MP Payment Date during the study period, the actual shortfall to the SWEM (which cannot be covered by credit support) could be more than $200,000, even in the absence of a transfer lead time. With the transfer lead time, the shortfall could have amounted to more than $1,000,000.

Since the shortfall in credit support coverage (resulting from the transfer lead time) is known ex-ante, an arrangement which does not require a net debtor MP to secure its exposure not only jeopardises the financial integrity of the market but is also unfair to other MPs which would have to bear the costs of the shortfall (via a default levy).

## 3.2    Option 2: Increase credit support requirements to either 35 or 38 days

Option 2 would be to increase the credit support requirements to cover a 35-day period (for average coverage) or a 38-day period (for maximum coverage), instead of the current 30-day period, to factor in the transfer lead time.

Given that this option is to account for the transfer lead time needed to transfer customers from the defaulting retailer to the RoLR (i.e. MSSL), the MSSL could be excluded from the provision of additional credit support as the transfer lead time is not applicable to their customers.

Although simply extending the credit support requirements by 5 or 8 days is a straightforward way of matching the MP's trading exposure with the coverage of credit support required, it imposes significant costs to the market.

Specifically, such costs largely comprise bank charges to provide additional collateral, given that banker's guarantees are currently the main form of credit support in the SWEM. Appendix B estimates the costs to all net debtors[13], excluding the MSSL, for the proposed increase in credit support.

## 3.3    Option 3: Commence transfer process earlier

The transfer lead time arose due to the steps required for the MSSL to carry out the RoLR-related procedures. Specifically, each of the following steps currently takes one BD:

**Step A**) SPS scans system for pending transactions to and away from the defaulting retailer
**Step B**) SPS submits customer transfer request (CTR)
**Step C**) SPS sends letter to notify affected customers of new supply arrangement with SPS

Since the trigger point to operationally effect the transfer is the CTR submission (Step B), the step of scanning the system for pending transactions (i.e. Step A) could potentially be carried out earlier, i.e. before the MSCP concludes its suspension order hearing, thus reducing the number of additional days of exposure. The proposed timeline for Option 3 is shown in Figure 6 below.

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[13] Typically, the MSSL and retailers.

**Figure 6: Revised RoLR lead time under Option 3**
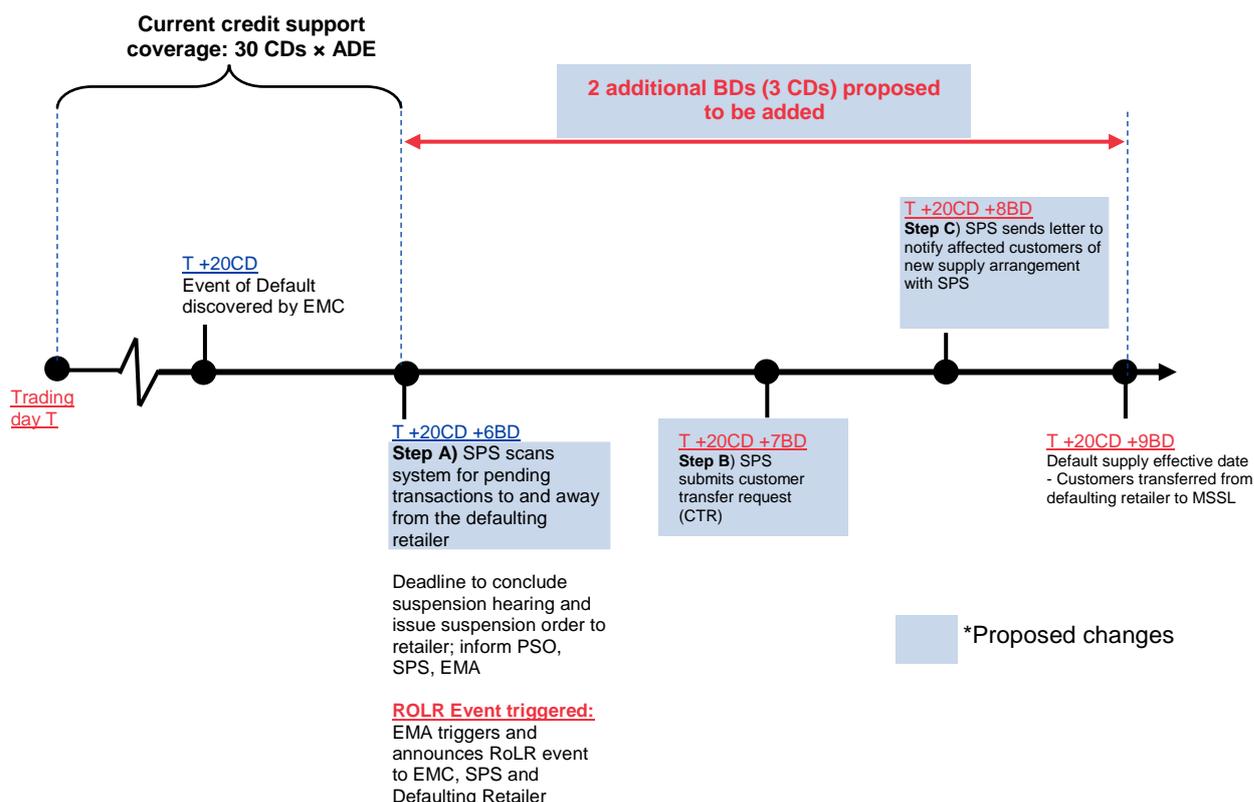


Option 3 effectively <u>reduces the number of days of additional credit support needed</u> to be provided by MPs from 5 or 8 CDs (under Option 2) <u>to 3 or 6 CDs</u>, depending on whether credit support should be procured based on average or maximum coverage.

Appendix A estimates the costs of this option to all net debtors[14], excluding the MSSL, for the proposed increase in credit support under Option 3.

### 3.4    Option 4: Backdate the Default supply effective date

Another option is to retrospectively backdate the default supply effective date to the day which is 1 CD after the issuance of the suspension order (i.e. the CD immediately after T +20 CD +6BD at the latest), so that the defaulting retailer effectively stops chalking up exposure upon suspension.

Under this proposal, although the actual day that all customer transfers can be successfully completed is on T +20CD +10BD, the effective date of transfer is proposed to be backdated to the calendar day immediately after the date that the defaulting MP is suspended by the MSCP. This would have the effect of treating the affected customers as having been successfully transferred to the RoLR (i.e. SPS) 1 CD after the defaulting retailer was suspended from trading in the market, while at the same time respecting the lead time required for SPS to perform the necessary transfer processes.

Figure 7 below illustrates the proposed arrangements under Option 4.

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[14] Typically, the MSSL and retailers.

**Figure 7: Illustration of backdating timeline under Option 4**
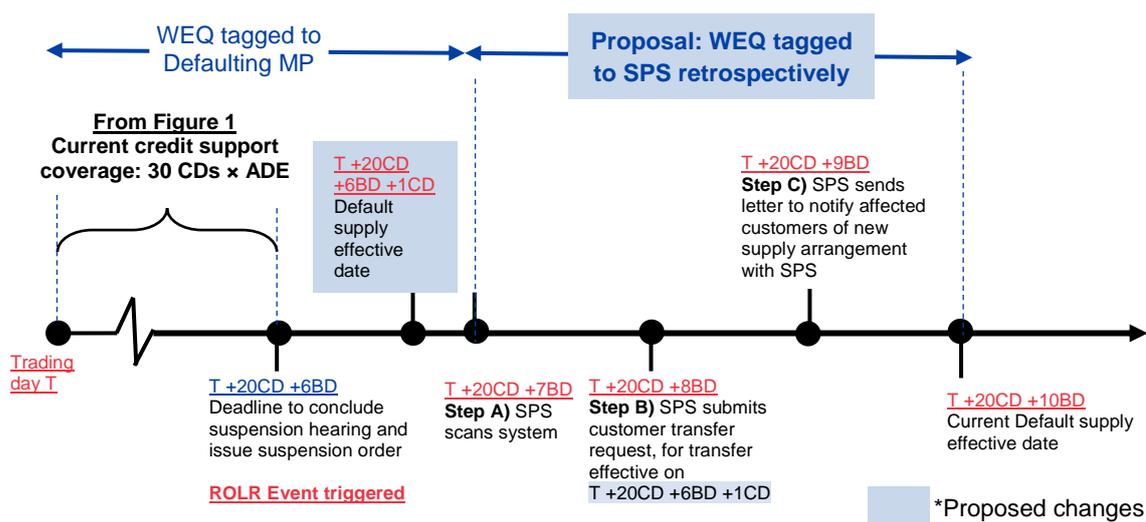


With the consumption of the affected customers during the transfer lead time tagged to SPS instead of the defaulting retailer, the financial integrity of the market is safeguarded without the need to increase the current credit support requirements to deal with Issue 2 (note that an increase may still be necessary if maximum coverage is to be adopted for Issue 1).

Instead, SPS will pay EMC for such affected customers' metered quantities during the transfer lead time and affected customers would be correspondingly billed by SPS. Table 1 below summarises the key differences in arrangements.

**Table 1: Key differences between the current arrangement and the proposed arrangement under Option 4**

| | Current Arrangement | Option 4 |
|---|---|---|
| Effective date of CTR | T +20CD +10BD | T +20CD +6BD +1CD |
| Party responsible for affected customers during transfer lead time | Defaulting retailer | SPS |
| Expected cost | Shortfall amount incurred is recovered via default levy from all non-defaulting MPs | System change on SPS's end to allow for the default supply effective date to be backdated and changes to the metering code. |

## 3.5    Summary of Options and EMC's Assessment

The following table summarises the 4 options examined, and EMC's assessment.

**Table 2: Summary of Options Examined**

| Option | Credit support requirement | Costs | EMC's Assessment |
|---|---|---|---|
| **Option 1: Maintain Status Quo** | Average coverage: No change<br><br>Maximum coverage: 32 calendar days | Costs to market resulting from shortfalls which cannot be sufficiently covered by credit support (via default levy borne by all non-defaulting MPs). | Not recommended.<br><br>Since the shortfall in credit support coverage (resulting from the transfer lead time) is known ex-ante, an arrangement which does not require a net debtor MP to secure its exposure not only jeopardises the financial integrity of the market but is also unfair to |

| Option | Credit support requirement | Costs | EMC's Assessment |
|---|---|---|---|
| | | | other MPs which would have to bear the costs of the shortfall. |
| **Option 2: Increase credit support requirements to 35 days or 38 days** | Average coverage: 35 calendar days<br><br>Maximum coverage: 38 calendar days | Costs to retailers from increased credit support requirements of 5 or 8 days.<br><br>System costs will be incurred by EMC. | While EMC agrees with Option 2, we understand that the higher credit support requirements imposes costs on the market. We, therefore, suggest examining other options (Options 3 and 4) which would both secure the market's financial integrity and lower the additional credit support requirements needed. |
| **Option 3: Commence transfer process earlier** | Average coverage: 33 calendar days<br><br>Maximum coverage: 36 calendar days | Costs to retailers from increased credit support requirements of 3 or 6 days.<br><br>Potential system changes by SPS.<br><br>System costs will be incurred by EMC. | Feasibility depends on SPS. |
| **Option 4: Backdate the default supply effective date** | Average coverage: 30 calendar days<br><br>Maximum coverage: 32 calendar days | System change by SPS to allow for the default supply effective date to be backdated.<br><br>Credit support requirements remain at 30 days or increase to 32 days. | Feasibility depends on SPS. |

Note that if Option 2 or 3 is adopted, the corresponding risk exposure[15] (RE) thresholds would have to be amended as follows:

**Table 3: Proposed changes to margin call triggers under Options 2 and 3**

| | | First notification triggered at | Margin call triggered at: | Margin call satisfied by: |
|---|---|---|---|---|
| **Current/ Option 4** | Average coverage | RE ≥ 60% | RE ≥ 70% (20/30×100% ≈ 66.67%) | RE ≤ 50% |
| | Maximum coverage | RE ≥ 55% | RE ≥ 65% (20/32×100% ≈ 62.5%) | RE ≤ 45% |
| **Option 2** | Average coverage | RE ≥ 50% | RE ≥ 60% (20/35×100% ≈ 57.14%) | RE ≤ 40% |
| | Maximum coverage | RE ≥ 45% | RE ≥ 55% (20/38×100% ≈ 52.63%) | RE ≤ 35% |
| **Option 3** | Average coverage | RE ≥ 50% | RE ≥ 60% (20/33×100% ≈ 60.60%) | RE ≤ 40% |
| | Maximum coverage | RE ≥ 50% | RE ≥ 60% (20/36×100% ≈ 55.55%) | RE ≤ 40% |

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[15] EMC assesses the adequacy of credit support held in respect of each MP by calculating their Risk Exposure = Estimated Net Exposure/Credit Support Held. Refer to Appendix C on how ENE is calculated.

## 4. Conclusion

This paper reviews the adequacy of the current credit support requirements in view of the lead time required for customer transfers in a RoLR event. Having established that the current requirements are insufficient to cover the trading exposure of defaulting retailer until the day when all its customers have been successfully transferred out, we do not recommend maintaining the status quo as it compromises the financial integrity of the wholesale market and propagates unfairness as all other non-defaulting MPs would have to bear the costs of any shortfalls.

One possible solution is to require all net debtors to put up more credit support. However, this solution comes at a cost to the market. Thus, we propose exploring the option of either commencing the transfer process earlier or backdating the default supply effective date for transferred customers, both of which would reduce, to some extent, the additional credit support required.

## 5. Consultation

We would like to seek the views of any interested party on this concept paper, and specifically on the following two issues:

    i.    Whether to procure credit support based on the average number of days of trading exposure or based on the maximum number of days of trading exposure (Issue 1); and

    ii.    The proposed solution (i.e. Options 1, 2, 3 or 4) to be adopted to address the gap in current credit support requirements arising from the transfer lead time (Issue 2).

We would also like to seek the inputs of SPS on the feasibility and cost/time estimates for Options 3 and 4.

We would appreciate receiving comments by **31 Dec 2018.**

**Appendix A: Distribution of Actual Exposure in year 2018**

Note: There are 11 days of public holidays (PH) for the year 2018.

| No. of Days of Actual Exposure | T to T +20CD + 6BD (Current) | | T to T +20CD + 10BD-1CD (Option 2) | | T to T +20CD + 9BD -1CD (Option 3) | |
|---|---|---|---|---|---|---|
| | Freq | Notes | Freq | Notes | Freq | Notes |
| 29 | 157 | If T +20 CD falls on either Mon, Tues, Wed, or Thurs and there are no PH during the 6 BD period | NA | | NA | |
| 30 | 78 | Either 1) T +20CD falls on a Sunday and there are no PHs in between the 6 BD or 2) T + 20CD falls on a Mon, Tues or Wed and there is a PH in between the 6 BD period | | | | |
| 31 | 92 | Either 1) T +20CD falls on a Sunday and there is a PH in between or 2) T +20CD falls on a Fri or Sat and there is no PH in between | | | 34 | T +20 CD falls on a Monday and there is no PH in between the 9 BD period |
| 32 | 38 | T +20CD falls on a Thurs, Fri or Sat and there is a PH in between | | | 35 | T +20CD falls on a Sun and there is no PH in between the 9 BD period |
| 33 | NA | | | | 171 | T +20 CD falls on a Tues, Wed, Thurs, Fri or Sat and there is no PH in between the 9 BD period |
| 34 | | | 163 | T +20CD falls on a Mon, Tues, Wed, Thurs, Fri and there is no PH in between the 10 BD period | 87 | T +20 CD falls on a Mon, Tues, Wed, Thurs or Fri and there is a PH in between the 9 BD period |
| 35 | | | 108 | Either 1) T +20CD falls on a Sunday and there is no PH in between the 10 BD period or 2) T +20 CD falls on a Mon, Tues, Wed, Thurs and there is a PH in between the 10 BD period | 20 | Either 1) T +20 CD falls on a Sun, and there is a PH in between the 9 BD period or 2) T +20CD falls on a Wed or Thurs and there are 2 PHs in between the 9 BD period |

| No. of Days of Actual Exposure | T to T +20CD + 6BD (Current) | | T to T +20CD + 10BD-1CD (Option 2) | | T to T +20CD + 9BD -1CD (Option 3) | |
|---|---|---|---|---|---|---|
| | Freq | Notes | Freq | Notes | Freq | Notes |
| 36 | | | 54 | Either 1) T +20CD falls on a Saturday and there is no PH in between the 10 BD period or 2) T +20CD falls on a Sunday and there is a PH in between the 10 BD period | 18 | T +20 CD falls on a Sat and there is a PH in between the 9 BD period |
| 37 | | | 39 | T +20 CD falls on a Friday or Sat and there is a PH in between the 10 BD period | | |
| 38 | | | 1 | T +20CD falls on a Friday and there are 2 PHs in between the 10 BD period. | | |
| Average | **~30 days** | | **~35 days** | | **~33 days** | |

**Appendix B: Cost of Providing Additional Credit Support under Options 2 and 3**

| | | Option 3 | | Option 2 | |
|---|---|---|---|---|---|
| | | Average coverage | Maximum coverage | Average coverage | Maximum coverage |
| **Annual Bank Charges[16]** | **Additional business days** | 2 | 2 | 3 | 3 |
| | **Average additional calendar days[17]** | 3 | 6 | 5 | 8 |
| 1% | **Total costs to market** = Average total ADE of net debtors in the SWEM × Bank charges × Number of additional calendar days | $51,000 | $102,000 | $85,000 | $136,000 |
| 1.5% | | $76,500 | $153,000 | $127,500 | $204,000 |
| 2% | | $102,000 | $204,000 | $170,000 | $272,000 |

Note: Figures calculated using the average of the aggregate ADE across all net debtors in the SWEM in August 2018 (S$1.7 million).

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[16] Based on rates obtained from the respective banks' websites, assessed on 01 December 2018. DBS: https://www.dbs.com.sg/sme/trade/bankers-gurantee-standby-letter-of-credit; OCBC: https://www.ocbc.com/business-banking/trade-and-international/buyer/import-bankers-guarantee.html; CIMB: https://www.cimbbank.com.sg/content/dam/cimbsingapore/business/support/others/standard-trade-finance-tariffs-20121101.pdf

[17] When combined with the existing 6BDs from the suspension process

## Appendix C: Illustration of Estimated Net Exposure Calculation

**Current credit support coverage: 30 CDs of trade**

**20 CDs of trading exposure**

**6 BDs/10 CDs default remediation and suspension process**

X-day period actual known exposure (CE; current exposure)

(20-X)-day period of exposure unknown

10-day suspension – exposure unknown

Trading day T

D-X

T +20CD
Event of Default discovered by EMC

Payment by net debtors due (for day T's trade)

T +20CD +6BD
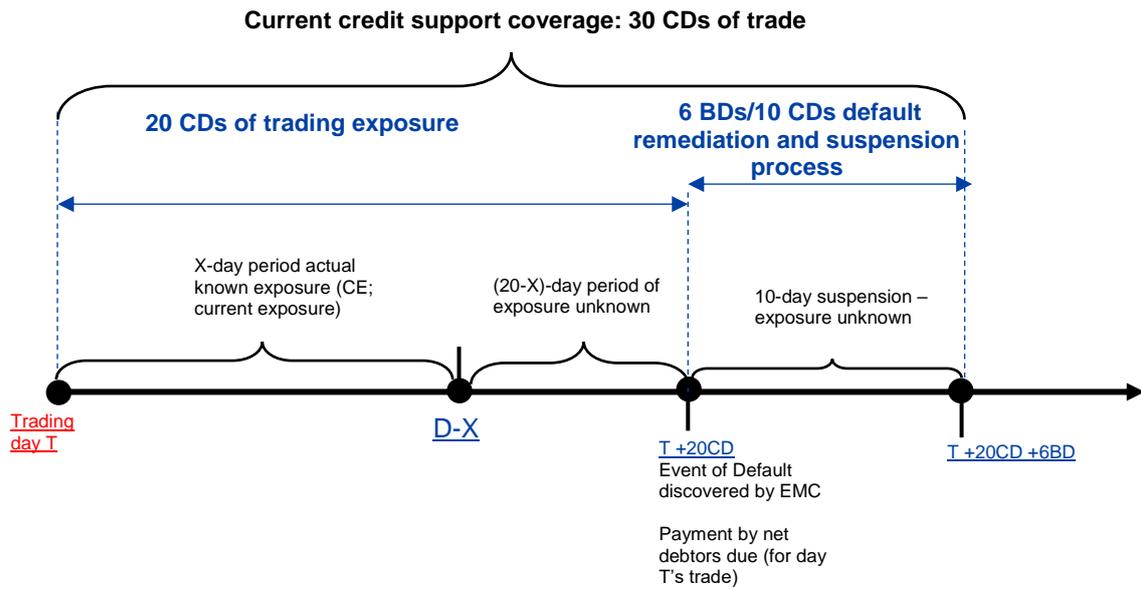
Estimated Net Exposure (ENE) = Current Exposure + (20-X) * Estimated ADE – Prepayment Amount