

Notice of Market Rules Modification

Paper No.:	EMC/RCP/107/2019/356
Rule Reference:	Chap 3 sec 3.3.1.5; Chap 5 sec 9.3.4, 9.3.7
Proposer:	EMC, Market Admin
Date Received by EMC:	13 November 2018
Category Allocated:	2
Status:	Adopted by Board
Effective Date:	NA

This paper assesses a proposal which suggested that interruptible load facilities, which have been activated to provide reserve by curtailing or reducing their consumption, should be allowed to resume consumption for dispatch periods in which they are not scheduled to provide reserve. This proposal arose from interruptible load service providers' concerns that participating consumers may face operational difficulties and adverse commercial impact when their load is sometimes required to remain interrupted for a prolonged duration after an activation.

After studying the situations that could lead to prolonged interruption and the impact to interruptible load service providers and their participating consumers, it is proposed that a **maximum interruption duration be specified** in order to give interruptible load service providers greater certainty on the impact of an activation.

In the course of our analysis, we also found that existing gate closure rules disallow interruptible load service providers from revising their reserve offers immediately after an activation. This may result in reserve being scheduled from resources which are not physically available and potentially pose a risk to system security. We therefore propose that the **gate closure exemptions be expanded to allow reserve offer revisions** under such scenarios.

At the 105th meeting, the RCP by majority vote supported the following proposals

- a) set a maximum interruption duration of 120 minutes of IL activation, beyond which the interruptible load service providers should be allowed to seek compensation;
- b) publish statistics on the frequency and duration of interruptible load activation; and
- c) allow offer revision within gate closure for LRFs following an interruptible load activation.

At the 107th RCP meeting, the RCP unanimously **supported** the proposed modifications set out in Annex 1.

Date considered by Rules Change Panel: 05 March 2019

Date considered by EMC Board: 20 March 2019

Date considered by Energy Market Authority:

Proposed rule modification:

See attached paper.

Reasons for rejection/referral back to Rules Change Panel (if applicable):

PAPER NO. : **EMC/BD/02/2019/05a**

RCP PAPER NO. : **EMC/RCP/107/2019/356**

SUBJECT : **RESTORATION OF LOAD REGISTERED FACILITIES
ACTIVATED TO PROVIDE RESERVE**

FOR : **DECISION**

PREPARED BY : **WANG JING
AVP, MARKET ADMINISTRATION**

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

DATE OF MEETING : **20 MARCH 2019**

Executive Summary

This paper assesses a proposal which suggested that interruptible load facilities, which have been activated to provide reserve by curtailing or reducing their consumption, should be allowed to resume consumption for dispatch periods in which they are not scheduled to provide reserve. This proposal arose from interruptible load service providers' concerns that participating consumers may face operational difficulties and adverse commercial impact when their load is sometimes required to remain interrupted for a prolonged duration after an activation.

After studying the situations that could lead to prolonged interruption and the impact to interruptible load service providers and their participating consumers, it is proposed that a **maximum interruption duration be specified** in order to give interruptible load service providers greater certainty on the impact of an activation.

In the course of our analysis, we also found that existing gate closure rules disallow interruptible load service providers from revising their reserve offers immediately after an activation. This may result in reserve being scheduled from resources which are not physically available and potentially pose a risk to system security. We therefore propose that the **gate closure exemptions be expanded to allow reserve offer revisions** under such scenarios.

At the 105th meeting, the RCP by majority vote supported the following proposals

- a) set a maximum interruption duration of 120 minutes of IL activation, beyond which the interruptible load service providers should be allowed to seek compensation;
- b) publish statistics on the frequency and duration of interruptible load activation; and
- c) allow offer revision within gate closure for LRFs following an interruptible load activation.

At the 107th meeting, the RCP unanimously **supported** the proposed modifications set out in Annex 1 to give effect to the RCP's decisions.

1. Introduction

The paper assesses the proposal to allow load registered facilities (LRFs) which have been activated to provide reserve (also known as interruptible loads (ILs)) to resume consumption for dispatch periods in which they are not scheduled to provide reserve.

2. Background

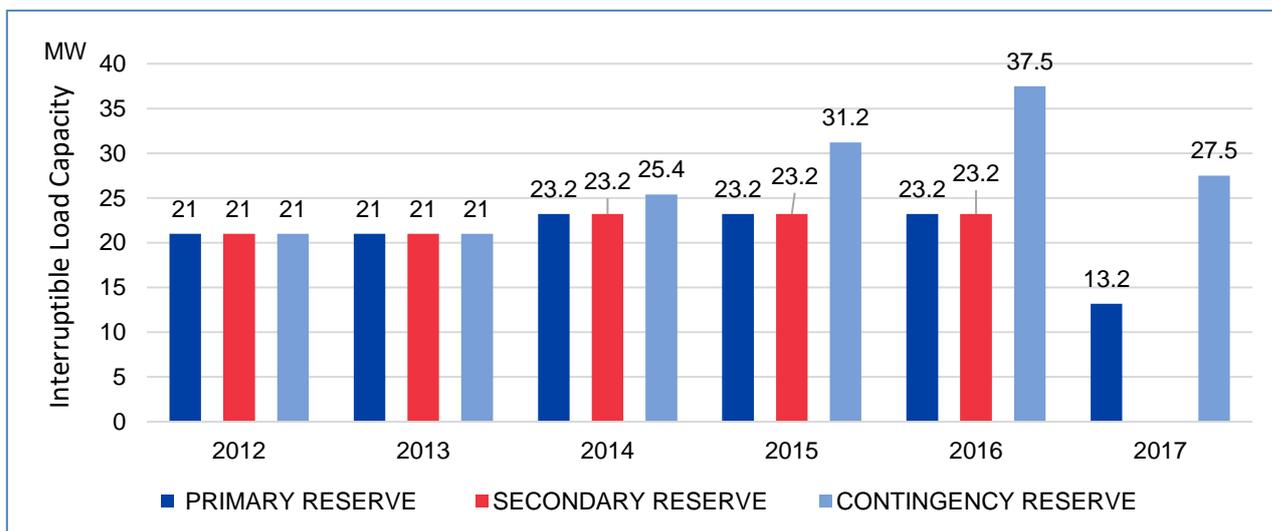
2.1 IL Services in Singapore Wholesale Electricity Market (SWEM)

IL service is a service provided by load facilities which offer voluntary curtailment or reduction of consumption under certain conditions such as contingency events or tight supply situations. ILs provide another means for system operators to maintain the balance between generation and consumption and is an ancillary service that is widely accepted in electricity markets.

Different electricity markets have different schemes to incentivise consumers to provide IL services. In SWEM, the IL service is subsumed under the category of reserve services. Consumers who wish to provide IL services compete with generators in the reserve markets.

The IL scheme in SWEM was introduced in 2004. A consumer who wishes to provide IL services would need to register its load as an LRF with EMC. Currently there are seven LRFs participating in the reserve markets. The aggregate registered reserve capacity of LRFs is shown in Figure 1 below.

Figure 1: Interruptible Load Capacity in SWEM (as at 31 Dec of each year)



With effect from 1 October 2017, primary reserve and secondary reserve were combined into one class of reserve, the new “primary reserve”.

2.2 Technical requirements applicable to IL

To be eligible to provide IL services, a LRF first needs to demonstrate that it is able to meet applicable performance standards before it can start offering reserves in the real-time markets.

Table 1 summarises performance standards applicable to IL service providers as required under the Market Rules and the System Operation Manual (SOM).

Table 1: Technical requirements applicable to LRFs providing reserve

Reference	Primary Reserve	Contingency Reserve
Market Rules (Appendix 5A Performance Standards for Ancillary Services)	Be capable of achieving its scheduled MW response <u>automatically</u> without further instruction from the PSO within 9 seconds of being triggered by any contingency event and shall be able to maintain its scheduled MW response until 10 minutes from the time it is triggered.	Be capable of achieving its scheduled MW response within 10 minutes of being instructed to do so and shall be able to maintain its scheduled MW response for not less than 30 minutes.
SOM	Reduction of active power drawn at all incoming feeders whenever test frequency falls below a pre-set level.	Must respond within 10 minutes of the PSO's initiation of contingency reserve capability test and sustain for an additional 30 minutes.
<u>Test requirements of Ancillary Services</u>	The minimum duration that the LRF must remain curtailed is not stipulated as part of the testing requirement.	
SOM	An LRF is deemed unable to provide reserve, if it	
<u>Compliance</u>	<ul style="list-style-type: none"> a. fails to maintain its scheduled reserve throughout a dispatch period¹; b. fails to deliver its scheduled reserve within the required time frame; or c. <u>restores its interrupted load before PSO gives clearance.</u> <p>In the case where there is no notification allowing the restoration of interrupted loads for more than 60 minutes after activation, IL service providers should check with the PSO on the status of load restoration.</p>	

It is worth noting that, under the SOM section 10.2.9, an LRF will be deemed unable to provide reserve if it restores its interrupted load before the PSO gives clearance, even if it has curtailed and maintained the scheduled MW of reserve for the required duration in accordance with the performance standards described under the Market Rules.

The SOM states that the notification of restoration will typically be issued within 60 minutes of activation.² However, there were a few instances where LRFs were not allowed to restore their load after two hours or longer.

The duration³ of the activation of contingency reserve from 2012 to 2017 is depicted in Figure 2.

¹ If there is a contingency event, an LRF shall maintain its scheduled reserve from the start of the dispatch period to the start of the contingency event.

² Section 9.6.2 of SOM states that if there is no notification on restoration of interrupted loads for more than 60 minutes after activation, dispatch coordinators of LRFs should check with the PSO on the status of interrupted load restoration. Before 2015, the typical restoration time stated in the SOM is 30 minutes.

³ Duration, in Figure 2, is calculated as the number of dispatch periods between the dispatch period (inclusive) that the advisory for activation is issued and the dispatch period that the advisory for restoration is issued (inclusive). As LRFs have up to 10 minutes to respond for contingency reserve, the actual duration that an LRF is required to remain curtailed could be shorter.

up to one hour or even longer depending on the timing of the forced outage and the response time for the tripped GRF to revise its offers.

Typically, the events leading to the activation and restoration of IL are in the following sequence:

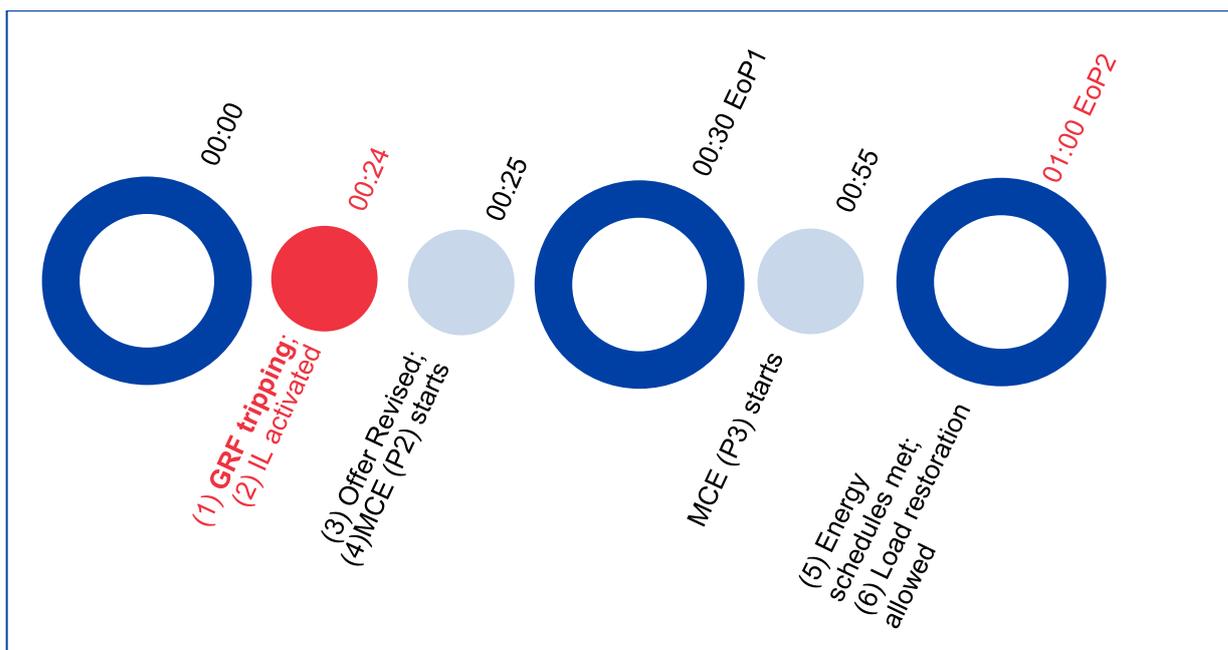
1. Tripping of a GRF
2. **Activation of reserve**
3. Offer revised to reflect the unavailability of tripped GRF
4. MCE produces the real-time schedule using revised offer
5. All GRFs comply with their real-time dispatch schedules for energy
6. **Load restoration allowed**

Scenario 1 in Figure 3 below is an example of an activation event where LRFs would be able to restore their load within a relatively short time.

In this scenario, the tripping of a GRF occurs just before the MCE starts producing the real-time schedule (RTS)⁵ for Period 2 (e.g. at 00:24) and contingency reserve is activated at the same time. If the tripped GRF had revised its offer in a timely manner (e.g. before 00:25), the MCE, which starts producing the RTS for Period 2 (00:30 to 01:00) at 00:25, will be able to schedule enough energy from other GRFs to replace the lost generation. Assuming all GRFs scheduled in Period 2 are able to meet their energy schedules at the End of Period (EoP), there will be enough energy produced to meet the demand by 01:00 and reserve providers can then correspondingly be relieved from their obligation to provide reserve.

Under this best-case scenario, the interruption duration is 36 minutes, i.e. from 00:24 to 01:00.

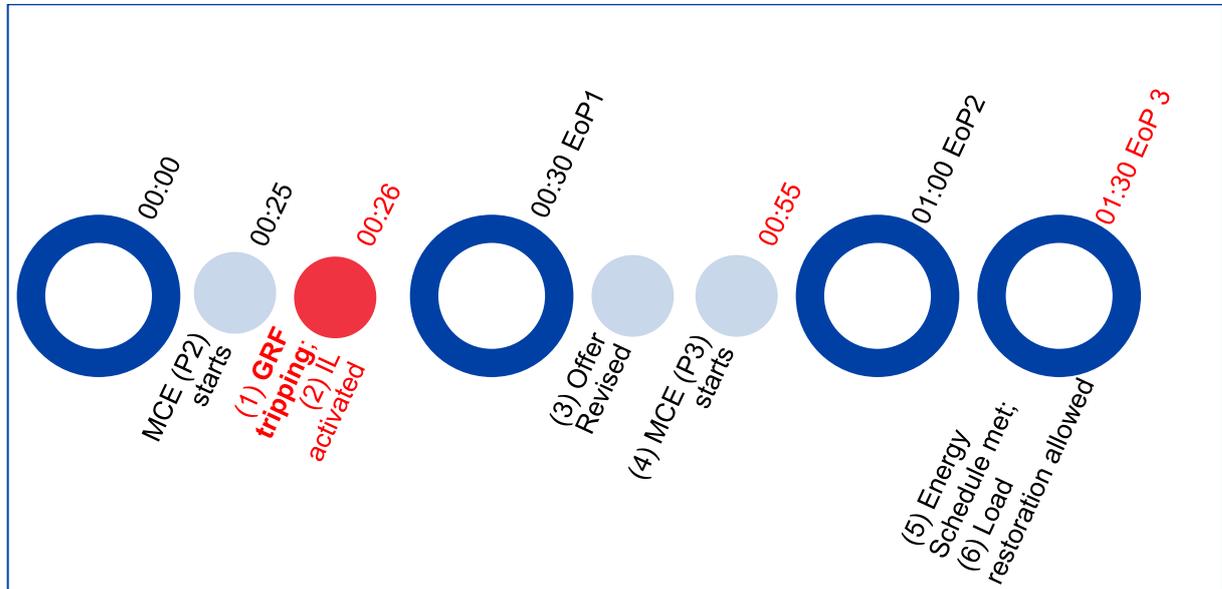
Figure 3: Timelines for Scenario 1



⁵ The MCE starts producing the RTS 5 minutes before each half-hour dispatch period.

In another scenario (scenario 2 in Figure 4 below), where a GRF trips right after the MCE has started producing the RTS for Period 2 (e.g. at 00:26), the MCE is only able to capture the unavailability of the tripped GRF when producing the RTS for Period 3, i.e. at 00:55. In this case, a reserve provider would need to maintain its scheduled reserve for about one hour, i.e. from 00:26 to 01:30.

Figure 4: Timelines for Scenario 2



The need for reserve providers to continue providing reserve beyond one hour may exist if any of the following conditions occur:

- a. The tripped GRF **fails to revise its offer** in the immediately next RTS. This would result in energy still being scheduled from the tripped GRF, and therefore insufficient energy scheduled from other physically available generators. The resulting energy shortfall requires reserve providers to continue providing reserve in the subsequent period.

As GRFs are required to promptly revise their offers to reflect actual generation capability after a forced outage, otherwise automatic financial penalties would apply, the likelihood of GRFs failing to revise their offers within the next period is relatively low⁶. However, it is still possible for a GRF to fail to revise its offer in the immediately next RTS. For example, a GRF that tripped at 00:01 may choose to revise its offer at 00:54 (for period 3) instead of at or before 00:24 (for period 2). Such GRF will not be penalised as long as it meets its schedule by the end of period 3. Under such a scenario, the duration required for reserve providers to continue providing reserve would be extended to close to **90 minutes** (i.e. from 00:01 to 01:30).

- b. **Another contingency event**, which requires the provision of reserve, occurs before the system was able to return to normal conditions from the first contingency event. Such contingency event could be the forced outage of another GRF or other conditions which led to the system entering into high risk or emergency operating state, for example, reserve shortfalls for subsequent periods, as is observed during the years 2014 to 2016 (based on incidents summarised in Table 2 below).

Historical records of IL activations between 2012 and 2017 (shown in Figure 2 above) illustrate that 90% of IL activations lasted less than two hours. Prolonged interruptions that lasted two hours

⁶ If a GRF experiences a forced outage, it can be exempted from being penalised for deviating from its energy schedule for two dispatch periods (i.e. the period that the forced outage occurs and the period after).

or more were mostly associated with contingency reserve shortfalls in the dispatch periods following the period in which a forced outage occurred. These events are summarised in Table 2 below.

Table 2: Prolonged IL Interruptions from 2012 to 2017

IL activation \geq 2 hours	Duration of interruption (hrs:mins)	Observations
3-June-2014	5:35 (P24-P34)	<ul style="list-style-type: none"> ▪ Contingency reserve shortfall from P23 to P34 ▪ Deficit ranging from 7 MW to 184 MW
7-May-2015	4:13 (P23-P31)	<ul style="list-style-type: none"> ▪ Contingency reserve shortfall from P24 to P30 ▪ Deficit range from 120 MW to 135MW
30-Jan-2016	3:59 (P27-P35)	<ul style="list-style-type: none"> ▪ Contingency reserve shortfall from P29 to P35 ▪ Deficit ranging from 9MW to 128MW
9-May-2016	3:09 (P29-P35)	<ul style="list-style-type: none"> ▪ Contingency reserve shortfall from P31 to P35 ▪ Deficit ranging from 66 MW to 88 MW
19-Aug-2016	2:29 (P33-P37)	<ul style="list-style-type: none"> ▪ Forced outage of multiple generators⁷
8-Dec-2016	3:03 (P22-P29)	<ul style="list-style-type: none"> ▪ Contingency reserve shortfall from P24 to P26 and P28 ▪ Deficit ranging from 31MW to 178MW
31-Dec-2016	2:21 (P7-P12)	<ul style="list-style-type: none"> ▪ Forced outage of multiple generators⁸

3.3 Impact of prolonged interruption to LRFs

Reserve providers are paid at reserve prices for all dispatch periods in which they have been scheduled to be on standby to provide reserve. If reserve is activated, reserve providers would need to incur additional costs to produce more energy (for reserve providers which are GRFs) or reduce its consumption (for reserve providers which are LRFs). In the course of providing reserve, while GRFs will receive payment for energy generated and LRFs will avoid incurring energy payment for consumption curtailed, these are based on the GRF's prevailing nodal energy price or the load's retail contract price respectively, and may not be commensurate with the actual cost incurred by reserve providers, especially for LRFs (of which the loss incurred for interruption beyond certain hours would increase exponentially).

In addition, until the interrupted load has been restored, the same capacity would not be able to provide reserve for subsequent dispatch periods. As a result, there would not be any reserve payment to these LRFs for subsequent dispatch periods.

Reserve providers would usually factor in both the frequency and duration of activation in their reserve offer prices. If the actual duration of interruption is longer than expected, the cost of providing reserve would increase in the long run. Furthermore, the uncertainty on the duration of each interruption would also deter participation from potential IL service providers and potentially lead to a less competitive reserve market.

4. Issues Identified and Proposed Solutions

4.1 Issue 1: System security versus LRF's obligation beyond the scheduled dispatch periods

As established in section 3.1, the PSO's clearance is critical before a load facility can resume its consumption. In recognition of the importance of maintaining system security, the existing Market

⁷ GRF 1 tripped at 15:51, IL activated at 16:07, GRF 2 tripped at 17:03. IL allowed to restore load at 18:36.

⁸ Two GRFs tripped at 02:35 and 02:38 respectively.

Rules allow the PSO to issue dispatch instruction to any registered facilities to provide any relevant services in order to prevent the system from entering into high risk or emergency operating state⁹.

The proposal, on the contrary, suggests that the obligation of a LRF to remain interrupted after activation of reserve should be limited to the dispatch periods for which they have offered and scheduled to provide reserve.

As explained in section 3.2 of this paper, since the need for LRFs to remain interrupted would likely persist beyond the dispatch period in which activation took place, we **do not agree** with the proposal to restrict the duration of IL interruption to dispatch periods that the LRF have been scheduled to provide reserve.

Conclusion:

The current requirement, where the PSO's clearance must be obtained before the interrupted load can be restored, should remain.

4.2 Issue 2: Inconsistency between performance standards set out in Market Rules/SOM and requirements in practice

As summarised in Table 1, the performance standards and/or expected behaviour stipulated under various regulatory documents are not consistent. Based on the performance standards prescribed under the Market Rules and the testing requirements in the SOM, an LRF can qualify as a contingency reserve provider as long as it can respond within 10 minutes and remain interrupted for 30 minutes. Therefore, it is possible that an LRF, that has offered and been scheduled for reserve in the current dispatch period, may only be capable of providing reserve for 30 minutes (based on what is tested in accordance with the SOM) but not for the subsequent dispatch periods due to either operational feasibility or commercial considerations.

In the event that the system requires more than 30 minutes to return to normal conditions (e.g. scenario 2 described in section 3), it could result in energy shortfalls if the LRF is indeed unable to remain curtailed for more than 30 minutes.

Proposed solution: Clarify Performance Standards/Expected Behaviour of LRF

We propose the following solutions to address Issue 2:

- a. Stipulate maximum interruption duration for LRFs after activation of reserve and apply the same in the testing requirement.

This would give certainty and confidence to IL service providers that their load can be restored after the pre-determined maximum interruption duration. With this information, potential IL service providers can better assess whether their load is suitable to provide the IL service.

If system conditions warrant that an LRF remains interrupted beyond this stipulated maximum interruption duration, it would be considered as the PSO overriding dispatch instructions, and consequently, the LRF should be allowed to seek for compensation. This would provide LRFs with the incentives to comply with the PSO's instruction during an abnormal operating state.

As analysed in section 3.2 of this paper, typically the system would be able to restore to normal conditions within about one hour after an activation of contingency reserve. Considering the response time needed for a tripped generator to revise its offers (as explained in section 3.2

⁹ Section 9.1.3 of Chapter 5 of Market Rules.

of this paper) and for the PSO to issue clearance, we propose the maximum interruption duration to be set at **120 minutes**.

Upon consultation, the PSO is of the view that it is not possible to accurately specify a maximum interruption duration that an LRF would be required to remain interrupted as system conditions are dynamic and there is no guarantee that the system is able to restore to normal conditions within any definite timeline.

EMC agrees that under exceptional cases, the PSO may require LRFs to remain interrupted for a prolonged duration. Such authority of the PSO has already been established under the current market rules. The maximum interruption duration proposed is intended to give IL service providers a clearer guideline of the expected performance under normal scenarios, and also to establish IL service providers' right to seek for compensation if the interruption duration is too long.

b. Publish statistics on the frequency and duration of IL activations.

Such information would allow existing and potential IL service providers to have a more realistic estimate of the cost of providing the IL service.

In addition, consideration can be given to extending the performance standards for contingency reserve, as stipulated in the Transmission Code¹⁰ and the Market Rules, from the current 30 minutes to 120 minutes.

4.3 Issue 3: Prolonged IL interruption due to contingency reserve shortfall in periods following an IL activation

As past incidents of prolonged interruption were mostly associated with contingency reserve shortfalls in the dispatch periods following the period where a forced outage that led to the activation of IL occurred, EMC has further investigated this scenario to assess if such prolonged interruption could be avoided.

When there is contingency reserve shortfall in a given period, it would mean that, in theory, if the largest scheduled generator trips, there could be insufficient reserve capacity to cover the lost generation. If an IL which was previously interrupted is allowed to restore its load during such periods, it will aggravate the already tight supply situation in the reserve market, as the remaining generation capacity needs to meet the higher energy demand. Consequently, there is less capacity on standby to provide reserve.

Essentially, if a LRF's load is restored during a period with reserve shortfall, the reserve shortfall would be even higher due to generation capacity being channelled to provide energy (that is consumed by the LRF restored)¹¹. If such reserve shortfall persists, the system may enter into emergency operating state. Under such scenarios, the PSO may exercise its power to limit the LRF's consumption to prevent the system from entering emergency operating state¹².

¹⁰ Please note that modifications to Transmission Code may not be under the purview of the Rules Change Panel. As Transmission Code has a higher hierarchy than the Market Rules, it is not advisable for changes to be made only to the Market Rules.

¹¹ Assuming this LRF does not offer reserve for the first few periods after restoring its load.

¹² Under section 11.4 of the SOM, if any reserve being scheduled by the MCE is less than the reserve requirement calculated by the MCE, the PSO may declare that the system is in high risk operating state. If the system is in high risk operating state for more than 30 minutes, the PSO may declare that the system is in an emergency operating state.

On the other hand, it should be recognised that an LRF, similar to any other non-dispatchable load, should be entitled to energy consumption if it has fulfilled its obligation to provide reserve in accordance with its schedule and the corresponding performance standards. Meeting the demand for energy should have a higher priority in dispatch, compared with satisfying the (non-core) reserve requirement¹³. This has been established in rule change paper *RC317 Review of Constraint Violation Penalties*¹⁴ where the RCP in 2013 supported that in the event of a contingency event, the available capacity resources should be channelled to meet demand instead of non-core reserve requirements.

Therefore, although the PSO is given the authority to direct LRFs to remain curtailed under a reserve shortfall scenario, EMC is of the view that unless the total scheduled reserve quantity falls below the core reserve requirement, LRFs should still be allowed to restore their load once enough energy has been produced to serve the load and system frequency has been normalised.

EMC consulted the PSO on the feasibility of the above suggestion. The PSO informed that it has reviewed its internal procedures and would allow LRFs to resume consumption once the system stabilises and returns to normal operating state following system disturbances. Further, it has been observed that prolonged interruption due to contingency reserve shortfall following a forced outage has not occurred since 2017.

4.4 Issue 4: Obligation for LRFs to revise offers after activation

As described in section 2.1, LRFs are required to maintain their scheduled reserve throughout a dispatch period in accordance with the compliance requirement set out in the SOM. When an LRF is activated to provide reserve in a dispatch period, its capability to provide reserve in the subsequent dispatch periods is likely to be reduced, considering that it may not be allowed to restore its load so promptly. If the LRF continues to be scheduled to provide reserve in these subsequent dispatch periods, it will not be able to maintain the scheduled reserve, which constitutes a non-compliance incident.

However, the current rules do not allow IL service providers to revise reserve offers within gate closure¹⁵. This has an adverse impact on both system security and IL service providers.

System security

If IL service providers are not allowed to revise their reserve offers for the subsequent dispatch periods immediately following an activation of IL, it could result in reserve being procured in those subsequent dispatch periods from LRFs which are not physically available to provide reserve in

¹³ Core reserve requirement refers to the minimum reserve requirement stipulated in the SOM.

¹⁴ <https://www.emcsg.com/f1136,82775/EMC317-EMA-LL.pdf>

¹⁵ The Market Rules (Chapter 6, Sections 10.4.1 and 10.4.2) allow offer or bid variations to be submitted within gate closure under the following conditions:

For a GRF, offer variation is allowed

- (a) To reflect changes in its ramp profile following synchronisation or preceding de-synchronisation
- (b) To reflect its unavailability arising from a forced outage
- (c) To decrease energy supply in an energy surplus situation, for which a market advisory notice has been issued
- (d) To increase energy, reserve or regulation supply if it improves a shortfall situation, for which a market advisory notice has been issued or for which an Emergency Operating State (EOS) system status advisory notice is in effect (i.e. has been issued and not yet withdrawn)

For a LRF, bid variation (not reserve offer) is allowed

- (e) To reflect its unavailability arising from a forced outage or decrease in energy withdrawal
- (f) To increase quantities in its energy bids if it improves an energy shortfall situation, for which a market advisory notice has been issued or for which an EOS system status advisory notice is in effect.

a contingency event. This could potentially lead to inadequate reserve being available from reserve providers, which would pose a risk to system security.

Penalty for IL Service Providers

The EMA, in its determination paper on “Enhancement to Interruptible Load scheme”¹⁶ published on 8 August 2018, had decided to introduce a financial penalty for each period of non-compliance by IL service providers at a penalty rate of \$2,500/MWh.

If an LRF’s offer is not revised and the LRF continues to be scheduled to provide reserve but is subsequently unable to comply, the IL service provider will face hefty financial penalty once this penalty scheme is implemented.

Proposed solution: Allow offer revision within gate closure for LRFs following an IL activation

In order for dispatch schedules produced by the MCE to correctly reflect LRFs’ capabilities to provide reserve, we propose that the current Market Rules be amended to allow an LRF to revise its reserve offers within gate closure to reflect its unavailability following an activation of reserve, similar to (i) how GRFs are allowed to revise energy offers immediately after a forced outage event, and (ii) how LRFs are allowed to revise energy bids following activation of reserve.

5. Consultation (Concept Paper)

EMC published the concept paper for consultation on 09 October 2018. Comments were received from six stakeholders.

Comments from Diamond Energy and EMC’s response

S/No	Section No	Comments from Diamond Energy	EMC’s response
1	1	<i>We welcome the EMC’s decision to look at the restoration for LRFs and attempting to address some grey areas with respect to the Market Rules and SOM. We are supportive of properly defining the service contract for an LRF providing reserve, along with the maximum duration of curtailment that should be expected.</i>	EMC notes that Diamond Energy is supportive of properly defining the service contract for LRFs.
2	2.2	<i>Our view is that as per the testing requirements in the SOM, the service contract for an LRF providing reserve is to</i> <ul style="list-style-type: none"> ▪ <i>Respond to the PSO’s Activation instruction within 10 minutes</i> ▪ <i>Sustain the response for an additional 30 minutes</i> ▪ <i>If the LRF remains scheduled for Reserve following the activation, then it should be bound to sustain its response. However, if it is no longer scheduled in the market, it</i> 	The compliance requirement as stipulated under the SOM/Market Rules also requires LRF to remain curtailed after an activation until clearance has been obtained from the PSO. The obligation to remain curtailed arises from the LRF being scheduled reserve for the <u>activation</u> period. Regardless of its reserve schedule for the <u>subsequent</u>

¹⁶ https://www.ema.gov.sg/cmsmedia/Final%20Determination%20Paper_Enhanced%20IL%20Scheme%20vf.pdf

S/No	Section No	Comments from Diamond Energy	EMC's response
		<p><i>means that the required reserve has been sourced from other facilities, and it should be free to resume normal operations. It is unfair to expect an LRF to remain curtailed indefinitely, especially when it is no longer scheduled in the market.</i></p>	<p>periods, the LRF should remain curtailed.</p> <p>EMC recognises the inconsistency in the performance standards defined in various governing documents and has proposed solutions in this paper to address it.</p>
3	3.1	<p><i>Given the small quantity of Interruptible Load registered in the market, we feel it is unfair to say that there may be a system security issue due to restoration of the LRF. If the argument presented is that the program design must take into account higher penetration of LRFs in the future, then we feel it will be better to link this to the system operating state. For example, LRFs can be allowed to restore the load if</i></p> <ul style="list-style-type: none"> ▪ <i>They have maintained their response for at least 30 minutes</i> ▪ <i>They are no longer scheduled to provide reserve</i> ▪ <i>The system is not in Emergency Operating State</i> <p><i>It stands to reason that if there is indeed a system security issue, the system will have moved to High-Risk or Emergency Operating State, in which clearance from the PSO should be obtained before restoration. If the desire is to avoid reaching the High-Risk state altogether, the Market Rules (Chapter 5, 2.2.3) also allow PSO to inform market participants if a high-risk operating state is anticipated, which can be used to restrict restoration of IL when there are enough LRFs in the system to pose a security risk.</i></p>	<p>EMC does not agree that there will not be a system security issue just because the existing IL capacity is small.</p> <p>EMC notes the suggestions on the possible load restoration criteria. The decision on when an IL can be restored is under the PSO's purview.</p>
4	3.3	<p><i>We would like to highlight that it is unfair to say that the payment for energy generated by GRFs when providing reserve is equivalent to the avoidance of energy payment for LRFs when curtailed. An LRF undergoes temporary curtailment, but</i></p>	<p>We understand that LRFs would not receive any additional payment after activation.</p> <p>It is the obligation of a reserve provider to sustain the required MW of response for the duration as per</p>

S/No	Section No	Comments from Diamond Energy	EMC's response
		<i>it has to increase energy consumption in subsequent periods to make up for lost production. Therefore, there are no "energy savings" from curtailment events, as the difference needs to be made up in the next few hours / days. Since there is no payment to LRFs for actually being dispatched, we propose that they should also be paid at the prevailing energy price (similar to the treatment for GRFs) if they are required to sustain their response into the subsequent trading period.</i>	performance standards defined. If the performance standard requires reserve providers to maintain their response in the subsequent dispatch periods, it shall be deemed as the reserve provider's obligation. There is no justification to pay LRFs at the prevailing energy price as the energy price (which reflects the marginal cost of generation) is irrelevant to the cost incurred by LRFs to provide reserve.
5	4.1	<i>As highlighted above, we propose that permission to restore load should be based on the System Operating State if there is concern about system security, which we feel is presently unwarranted given the low penetration of LRFs.</i>	Please refer to our response to comment 3 above.
6	4.2	<i>We are supportive of EMC's proposal of stipulating maximum interruption duration, but suggest that this be defined in number of market periods rather than minutes (for example, 2 periods following the period of activation). Based on the service contract defined earlier, we feel that LRFs should be paid at the energy price for sustained curtailment into the subsequent trading period. If the curtailment exceeds the maximum duration defined here (through PSO overriding dispatch instructions), additional compensation may be sought, noting that the cost of prolonged curtailment for LRFs is exponential rather than linear.</i>	The proposed maximum interruption duration of 120 minutes factors in an additional 30 minutes for the PSO to issue advisory notice to allow IL restoration. If the duration is to be pegged to number of periods, it should be set at 3 periods following the period of activation in order to allow the same response time for the PSO.
7	4.3	<i>We welcome the EMC and PSO's review of procedures that will reduce the longer duration IL events that are unnecessary.</i>	We note Diamond Energy's view.
8	4.4	<i>We are supportive of EMC's proposal to allow offer revision within gate closure for LRFs, but in the current scenario, we feel this is more applicable at the time of IL restoration rather than IL activation. Considering that presently there is no payment for LRF reserve providers for actual delivery of the service, it is unfair to expect them to zero out their offers</i>	As explained in section 4.4, we are of the view that LRFs, which are unable to curtail their load further after an IL activation, should not be scheduled to provide reserve for subsequent periods, as this would result in reserve being procured from physically unavailable resources. Therefore, LRFs should revise their reserve offers promptly

S/No	Section No	Comments from Diamond Energy	EMC's response
		<p>during a curtailment event and continue providing the curtailment for free.</p> <p>We do understand EMC's perspective regarding reserve being scheduled in the market when essentially it is not available to be called upon since it has already been delivered. We feel this is best addressed by our earlier suggestion of paying LRFs based on energy prices for delivery of the service into the subsequent trading period, similar to GRFs. Without this, requiring LRFs to remove their offers during a curtailment event and continuing to provide the service for free will be considered unfair from our perspective.</p>	to reflect the change in their reserve capability.
9	5	We feel this consultation is a step in the right direction, and hope that our feedback and suggestions will be given due consideration such that a level playing field for LRFs in the market will result.	We note Diamond Energy's view.

Comments from Senoko Energy

1. We acknowledge that the inconsistency between the requirements of providing contingency reserve in the Market Rules and the effective interrupted load imposed in practice, has been a pain point for the IL providers. An introduction of a defined maximum load interruption time limit would alleviate concerns of potential IL providers and increase participation of LRFs. Providing more detailed information on the frequency, duration and magnitude of IL activations would increase transparency in this segment as well.
2. In line with EMC's view in Point 4.3, we agree that an LRF should be entitled to energy consumption after it has fulfilled its reserve obligation that it is scheduled for, and LRFs should be allowed to restore their load. LRFs should be able to choose between
 - a. Continue to provide reserve, continue its load interruption, and receive reserve payment for the service that it has been scheduled and provided.
 - b. Change its offers to reflect its inability to offer reserve, and be allowed to synchronise.
3. The same gate closure conditions that apply to LRFs should be extended to GRFs.
4. In the event that PSO instructs the facility to remain offline, the facility should be able to claim compensation through a defined mechanism.

EMC's Response

1. We note Senoko Energy's view.
2. As an LRF that has been curtailed to provide reserve in a given period would not be able to curtail further in the subsequent periods (unless they have been restored), we do not think that such LRF should have the choice of continuing to provide reserve in the subsequent periods.

3. In principle, we agree that GRFs should be allowed to revise their reserve offers downward to reflect changes in reserve capability after an activation of reserve. However, given that the MCE would already take into consideration a GRF's reserve capability into its modelling, we do not feel that it is necessary to provide such gate closure exception.
4. If the PSO instructs the facility to remain offline beyond the prescribed maximum curtail duration, it should be considered as the PSO overriding dispatch instruction under section 9.1.3 of Chapter 5. Subsequently, MPs would be allowed to seek for compensation under the existing Market Rules provisions.

Comments from Tuas Power Generation

- 1) *On the stipulation of maximum interruption duration for LRFs after activation of reserve*

Tuas Power has, in principle, no objection to the stipulation of a maximum interruption duration for the LRFs and a minimum curtailed duration in the testing requirement subject to PSO's approval and determination of this duration.

With regards to ILs having the right to seek for compensation if the maximum interruption duration is exceeded, Tuas Power would like to request for this right to be extended to all the reserve providers, i.e. ILs and GRFs providing reserves. This is because during a prolonged contingency event, the GRFs providing reserves may also have cost/ financial impact, such as incurring excess gas charges.

- 2) *On allowing LRFs to revise the reserve offers within gate closure after being activated to provide reserve*

Tuas Power does not support the gate closure exemptions to include reserve offers revision by LRFs following an activation.

Breaching gate closure rule disrupts the market operating process, such as price discovery. Hence, gate closure exemptions should only be for emergency events such as forced outages of GRFs/ LRFs or energy shortfall situations affecting system stability.

In addition, EMC is proposing the maximum interruption duration for the LRFs/ minimum curtailed duration in the testing requirement by PSO to be 120 minutes. This duration is much longer than the current 65 minutes gate closure period, providing ample time for the LRFs to revise their reserve offers if the LRFs deemed that they are unable to provide further reserves in the subsequent dispatch periods following the activation.

EMC's Response

- 1) We note Tuas Power Generation's view. If a GRF has been activated to provide reserve beyond the prescribed duration in the performance standards, it should be considered as the PSO overriding dispatch instruction under section 9.1.3 of Chapter 5. Subsequently, MPs would be allowed to seek for compensation under the existing Market Rules provisions, if there is loss incurred in the course of complying with the PSO's instruction.
- 2) As the proposed gate closure exemption is to allow LRFs to revise their reserve offers downwards to reflect their reduced reserve capability for the periods immediately after the activation, such offer revision will fall within the 65 minutes gate closure period. The proposed exemption is in line with current exemptions where GRFs are also allowed to revise offers within gate closure to reflect their revised capabilities following a forced outage, and LRFs are allowed to revise energy bids following IL activation.

Comments from YTL PowerSeraya (YTLPS) and EMC's response

S/No	Section No	Comments from YTLPS	EMC's response
1	4.1	<p><i>Under the Singapore Electricity Market Rules, Chapter 5 (System Operation), Section 9.3 (Dispatch of Reserve Capacity and Reserve Activation), it is stipulated that if a load registered facility that is issued a dispatch instruction for reserve decreases energy withdrawal pursuant to the market rules, the market manuals or the system operation manual, its load shall not be restored until and unless directed or permitted by the PSO via a load restoration notice.</i></p> <p><i>Likewise, each reserve provider shall respond to any dispatch instruction that the PSO may issue pursuant to section 9.1.3 within the dispatch period, instructing the registered facility providing reserve to begin increasing energy production or decreasing energy withdrawal, as the case may be, and subject to section 4.13.1, up to the quantity specified in its real-time dispatch schedule for that reserve class within the time and in accordance with the performance standards specified in section A.2 of Appendix 5A.</i></p> <p><i>Thus, there should be no concession for the restriction on the duration of IL interruption to dispatch periods that the LRF have been scheduled to provide reserve. We support the adoption of the current requirement.</i></p>	<p>We note YTLPS's view.</p>
2	4.2	<p><i>The activation of interruptible load by the LRF serve to alleviate period of high risk or emergency state. Without certainty in the duration of such states, a maximum duration of 120 minutes of interruption for LRF is counterproductive.</i></p> <p><i>In addition, it's only equitable that the LRF is obliged to its dispatch according to its offer for periods that have been activated. Under normal scenarios, LRF is being remunerated for its participation in the IL scheme.</i></p>	<p>The proposed maximum interruption duration is to allow LRFs to seek for compensation if the curtailment exceed this pre-determined duration. The PSO still has the authority to direct LRFs to remain offline if warranted by the system conditions.</p>

S/No	Section No	Comments from YTLPS	EMC's response
		<i>Thus, we do not concur with the proposal of having the maximum interruption duration to be set at 120 minutes.</i>	
3	4.4	<p><i>The proposed solution is fair given that non-compliance carries a financial penalty. However the revision to offers within the gate closure should adhere strictly to a set of stipulated scenarios. Reference can be taken from the Singapore Electricity Market Rules, Chapter 6 (Market Operation) under section 10.4 (Gate Closure).</i></p> <p><i>We urge for a clear and defined boundary for such provision in order to minimize any wilful actions.</i></p>	<p>The proposed gate closure exemption is to allow LRFs to revise their reserve offers downwards to reflect their reduced reserve capability for the periods immediately after the activation.</p> <p>If the RCP supports the proposal in principle, details will be prescribed in the draft rule change and published for comments.</p>

Comments from Keppel and EMC's response

S/No	Section No	Comments from Keppel	EMC's response
1	4.1	<i>We recognize that clearance must be obtained from PSO before an IL can be restored to maintain system security. However, we would like to suggest that some additional forecast and communication mechanisms to be put in place between PSO and LRFs, such that LRFs are aware of likely maximum interruption duration to make its' own necessary arrangements to minimize internal operational and commercial impacts.</i>	<p>The PSO has indicated that as soon as the system is back to normal operating state, the PSO will allow the restoration of IL.</p> <p>Furthermore, as stipulated in the Section 9.6.2 of the SOM, IL providers should check with the PSO if the load restoration has not been received for more than 60 minutes after activation.</p>
2	4.2	<p><i>We wish to seek clarification from EMC on the following matters:</i></p> <ol style="list-style-type: none"> <i>1) Mechanisms of the proposed compensation scheme for IL activation duration beyond 120 minutes.</i> <i>2) where the proposed compensation amount is to be recovered from.</i> <i>3) if the proposed maximum interruption duration of 120 minutes is only applicable to LRFs who are not scheduled for reserves in the subsequent periods following IL activation.</i> 	<ol style="list-style-type: none"> 1) It will follow the existing compensation mechanism, where the ILs should be compensated for its loss incurred should the curtailment exceed the defined maximum interruption duration. 2) The compensation amount will be recovered from loads via Monthly Energy Uplift Charge (MEUC), as provided for under section 4.1.1 of Chapter 7 of the Market Rules. 3) LRFs that have been curtailed should not have offered and been scheduled to provide reserve in the first place.

S/No	Section No	Comments from Keppel	EMC's response
3	4.4	<i>We agree that IL service providers should be allowed to revise their reserve offers immediately in the subsequent periods following IL activation for dispatch schedules produced by the MCE to correctly reflect LRFs' reduced availability of reserves.</i>	We note Keppel's view.

Comments received from Red Dot Power and EMC's response

S/No	Section No	Comments from Red Dot Power	EMC's response
1	4.1 "The current requirement, where the PSO's clearance must be obtained before the interrupted load can be restored, should remain."	<i>We strongly disagree with this conclusion. The PSO should be capable to determine how long the individual LRFs will be able to curtail their load based on their participation schedule and therefore anticipate to which extent the IL activation event will support the Grid.</i>	There would still be cases where PSO might not be able to predetermine the duration required for system to return to normal operating state.
2	4.2 "Proposed solution: a) Stipulate maximum interruption duration for LRFs after activation of reserve and apply the same in the testing requirement."	<i>We agree to the proposal to set the maximum interruption duration to be set at 120 minutes. However, if activation lasts more than 120 min, we propose that LRFs will not be penalized if they restore their load after 120 mins. This provides greater clarity for LRFs vis-à-vis the support required from their operations. Compensation is irrelevant because most LRFs are unable to operationally fulfil curtailment beyond a certain duration (usually no more than 120 mins). Many potential LRFs decline participation as they are not able to curtail beyond 120 mins and they would not like to expose to a non-compliance situation if they restore at the end of 120 minutes curtailment period. By adopting RDP</i>	We share Red Dot Power's view that greater clarity on the interruption duration would encourage IL participation. If an LRF restores its load without PSO's clearance, it will be considered as being non-compliant and should be referred to the MSCP to assess if penalty should apply.

S/No	Section No	Comments from Red Dot Power	EMC's response
		<i>suggestion would increase volume of participation in IL.</i>	
	4.2 "Proposed solution b) Publish statistics on the frequency and duration of IL activations."	<i>While the document shows that 90% of IL activations lasted less than two hours, the remaining 10% (two hours and more) currently prevails as far as LRFs capability is concerned since there is currently no prior indication from EMA/PSO to give heads up on each activation duration. Such volatility in duration means that LRF must be prepared for the worst case scenario. Therefore such statistics may become irrelevant. As IL provider, RDP in any case maintains such statistics and shares with existing and potential LRFs.</i>	We agree that the statistics do not provide <u>certainty</u> on interruption duration. EMC's intent to provide such statistics is to allow existing and potential IL providers to have a more realistic <u>estimate</u> of the interruption duration.
3	4.2 "Proposed solution c) In addition, consideration can be given to extending the performance standards for contingency reserve, as stipulated in the Transmission Code10 and the Market Rules, from the current 30 minutes to 120 minutes."	<i>Although such duration is tested prior to LRF phase (internal tests), we agree that such duration should be also tested during the live test (involving PSO) as it better represents a worst case scenario</i>	We note Red Dot Power's view.
4	4.3 "Prolonged IL interruption due to contingency reserve shortfall in periods following an IL activation"	<i>We agree with EMC view as long as the total IL interruption period is not more than 120 minutes. We expect PSO to take into account the performance constraints of LRFs to comply the interruption duration with a maximum of 120 minutes and make alternative arrangements knowing fully well that after</i>	We note Red Dot Power's view. We wish to clarify that "normal operating state" advisory notice does not serve as the consent for LRFs to restore their load. The PSO's explicit clearance is still required.

S/No	Section No	Comments from Red Dot Power	EMC's response
		<p><i>120 minutes the LRF would not be available to provide the required energy curtailment.</i></p> <p><i>Further, we note that PSO would allow the LRFs to restore their loads once "normal operating state" message is received.</i></p> <p><i>However most of the times the "normal operating state" message by EMC is received 10 to 20 min after the fact. Hence the above is pointless.</i></p>	
5	4.4 "Obligation for LRFs to revise offers after activation"	<p><i>We agree with the proposed solution considering that certain LRFs are not capable of sustaining more than 1 activation at a time and need at least several periods to recuperate.</i></p>	We note Red Dot Power's view.

6. Conclusion

This paper assessed the concerns of IL service providers in relation to having to remain interrupted for a prolonged period of time after activation.

After analysing possible causes behind such prolonged interruption and the impact to the IL service providers and system operation, we first established the importance for the PSO's clearance to be obtained before any LRF can restore its load.

In order to address IL service providers' concerns relating to the operational difficulties and commercial impact experienced during a prolonged interruption, EMC proposes, among other things, to define a maximum interruption duration for IL activation which would provide not only more clarity on the expectation of LRFs under normal scenarios, but also greater certainty to IL service providers.

In addition, EMC also proposes allowing LRFs to revise their reserve offers within gate closure after being activated to provide reserve. This will ensure that the resulting schedules of the MCE for subsequent dispatch periods can correctly capture LRFs' unavailability in a timely manner and schedule adequate reserve from resources that are physically available.

7. RCP's Decisions at the 105th RCP Meeting

EMC recommended, at the 105th RCP meeting, that the RCP **support** EMC's proposals to:

- a) stipulate a maximum interruption duration for IL activation, beyond which the IL services providers should be allowed to seek for compensation. We propose such duration to be set at 120 minutes, or three periods after the IL activation period;
- b) publish statistics on the frequency and duration of IL activation; and
- c) allow offer revision within gate closure for LRFs following an IL activation.

The Panel, **by majority vote, supported** the following proposals:

- a) stipulate a maximum interruption duration of 120 minutes for IL activation, beyond which the IL services providers should be allowed to seek compensation;
- b) publish statistics on the frequency and duration of IL activation; and
- c) allow offer revision within gate closure for LRFs following an IL activation.

Details of the voting outcomes are set out in Table 3 below.

Table 3: Summary of Voting Outcomes

RCP Member		Proposals		
		a) stipulate maximum interruption duration of 120 minutes for IL activation	b) publish statistics	c) allow offer revision within gate closure for LRFs following an IL activation
Representative of EMC	Mr. Henry Gan	Support	Support	Support
Representative of PSO	Mr. Soh Yap Choon	Abstained	Abstained	Support
Representative of Generation Licensee	Mr. Tan Jun Jie	Support	Support	Support
Representative of Transmission Licensee	Ms. Carol Tan	Support	Support	Support
Representative of Retail Electricity Licensee	Mr. Sean Chan	Support	Support	Support
	Mr. Vijay Sirse	Support	Support	Support
Representative of Wholesale Electricity Trader	Mr. Matthew Yeo	Support	Support	Support
Representative of the market support services licensee	Ms. Ho Yin Shan	Support	Support	Support
Person experienced in Financial Matters in Singapore	Mr. Tan Chian Khong	Support	Support	Support
Representative of Consumers of Electricity in Singapore	Dr. Toh Mun Heng	Support	Support	Abstained
	Mr. YK Fong	Support	Support	Abstained
Decision		By majority vote support	By majority vote support	By majority vote support

8. Proposed Rule Modifications

To give effect to the RCP's decision on **proposal a)** in section 7, EMC has drafted the proposed rule modifications set out in Annex 1 and summarised in Table 4 below.

Table 4: Summary of Proposed Modifications

Chapter/ Section of Market Rules	Proposed Changes	Reasons for Change
Chapter 5 section 9.3.7 (new)	Added new sections to allow an LRF to seek compensation if <ul style="list-style-type: none"> ▪ it has responded to a contingency event by providing primary or contingency reserve; and ▪ a load restoration notice is not issued within 120 minutes after the activation 	To give effect to the proposal to allow LRF to seek compensation if the duration of load interruption is more than 120 minutes.
Chapter 5 section 9.3.4	Added reference to section 9.1.2.	To make clear that the obligation to provide contingency reserve is only for reserve providers that have been scheduled for contingency reserve under section 9.1.2.
Chapter 5 section 9.3.4	Deleted reference to section 9.1.3.	To make it clear that PSO's activation of contingency reserve is not subject to section 9.1.3.
Chapter 3 section 3.3.1	Added reference to section 9.3.7 of Chapter 5.	To reflect the new provision for compensation for LRF.

There is no rule modification required to give effect to RCP's decision on **proposal b)** in section 7. EMC will include the statistics of the frequency and duration of IL activation in the monthly trading reports, which are published on EMC's public website.

Rule modifications to give effect to the RCP's decision on **proposal c)** in section 7 is included in rule change paper *RC357: Gate Closure Exemptions*.

9. Legal Sign-Off

The text of the proposed rule modifications in Annex 1 has been vetted by EMC's internal legal counsel, whose opinion is that the proposed rule modifications reflect the intent of the rule modifications proposal as expressed in the third column of the table in Annex 1.

10. Consultation (Proposed Rule Modifications)

The proposed modifications were published for consultation on 1 February 2019. No comments were received.

11. RCP's Decisions at the 107th RCP Meeting

At the 107th meeting, the RCP **unanimously supported** the proposed rule modifications as set out in Annex1.

12. Recommendations

The RCP unanimously recommends that the EMC Board:

- a) **adopt** the proposed rule modifications as set out in **Annex 1**;
- b) **seeks the EMA's approval of** the proposed rule modifications as set out in **Annex 1**; and
- c) **recommends** that the proposed rule modifications as set out in **Annex 1** come into force **one business day** after the date on which the approval of the Authority is published by the EMC.

ANNEX 1: Proposed Modifications

Existing Market Rules (1 Jan 2019)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Rule Changes												
Chapter 3	Chapter 3													
<u>3.3 SCOPE</u>	<u>3.3 SCOPE</u>													
<p>3.3.1 Disputes that shall be resolved by the dispute resolution process in section 3 are shown in the table below:</p> <table border="1" data-bbox="129 687 889 1295"> <thead> <tr> <th></th> <th>Disputes between</th> <th>Disputes in respect of</th> </tr> </thead> <tbody> <tr> <td>3.3.1.5</td> <td> <ul style="list-style-type: none"> - EMC and a market participant - EMC and a market support services licensee - PSO and a market participant - PSO and a market support services licensee </td> <td> <ul style="list-style-type: none"> - request for compensation made under any of the following: - section 4.7.3 of Chapter 5 ... - section 9.1.7 of Chapter 5 - section 9.7.3 of Chapter 5 ... </td> </tr> </tbody> </table>		Disputes between	Disputes in respect of	3.3.1.5	<ul style="list-style-type: none"> - EMC and a market participant - EMC and a market support services licensee - PSO and a market participant - PSO and a market support services licensee 	<ul style="list-style-type: none"> - request for compensation made under any of the following: - section 4.7.3 of Chapter 5 ... - section 9.1.7 of Chapter 5 - section 9.7.3 of Chapter 5 ... 	<p>3.3.1 Disputes that shall be resolved by the dispute resolution process in section 3 are shown in the table below:</p> <table border="1" data-bbox="920 687 1680 1362"> <thead> <tr> <th></th> <th>Disputes between</th> <th>Disputes in respect of</th> </tr> </thead> <tbody> <tr> <td>3.3.1.5</td> <td> <ul style="list-style-type: none"> - EMC and a market participant - EMC and a market support services licensee - PSO and a market participant - PSO and a market support services licensee </td> <td> <ul style="list-style-type: none"> - request for compensation made under any of the following: - section 4.7.3 of Chapter 5 ... - section 9.1.7 of Chapter 5 - <u>section 9.3.7 of Chapter 5</u> - section 9.7.3 of Chapter 5 ... </td> </tr> </tbody> </table>		Disputes between	Disputes in respect of	3.3.1.5	<ul style="list-style-type: none"> - EMC and a market participant - EMC and a market support services licensee - PSO and a market participant - PSO and a market support services licensee 	<ul style="list-style-type: none"> - request for compensation made under any of the following: - section 4.7.3 of Chapter 5 ... - section 9.1.7 of Chapter 5 - <u>section 9.3.7 of Chapter 5</u> - section 9.7.3 of Chapter 5 ... 	<p>To reflect the insertion of a new compensation mechanism for load registered facilities under section 9.3.7 of Chapter 5.</p>
	Disputes between	Disputes in respect of												
3.3.1.5	<ul style="list-style-type: none"> - EMC and a market participant - EMC and a market support services licensee - PSO and a market participant - PSO and a market support services licensee 	<ul style="list-style-type: none"> - request for compensation made under any of the following: - section 4.7.3 of Chapter 5 ... - section 9.1.7 of Chapter 5 - section 9.7.3 of Chapter 5 ... 												
	Disputes between	Disputes in respect of												
3.3.1.5	<ul style="list-style-type: none"> - EMC and a market participant - EMC and a market support services licensee - PSO and a market participant - PSO and a market support services licensee 	<ul style="list-style-type: none"> - request for compensation made under any of the following: - section 4.7.3 of Chapter 5 ... - section 9.1.7 of Chapter 5 - <u>section 9.3.7 of Chapter 5</u> - section 9.7.3 of Chapter 5 ... 												

Existing Market Rules (1 Jan 2019)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Rule Changes
Chapter 5	Chapter 5	
<u>9.3 DISPATCH OF RESERVE CAPACITY AND RESERVE ACTIVATION</u>	<u>9.3 DISPATCH OF RESERVE CAPACITY AND RESERVE ACTIVATION</u>	
<p>9.3.1 The <i>dispatch instructions</i> for <i>reserve</i> issued to each applicable <i>dispatch coordinator</i> for or within a given <i>dispatch period</i>, as the case may be, shall indicate the amount of <i>reserve</i>, in MW, of each <i>reserve class</i> that, throughout the <i>dispatch period</i> unless an event that triggers a <i>reserve</i> response occurs in such <i>dispatch period</i>, is to be in a condition to respond to a fall in <i>PSO controlled system</i> frequency or to respond to a <i>dispatch instruction</i> issued pursuant to section 9.3.4 calling for additional <i>energy</i> production.</p> <p>9.3.2 Each <i>registered facility</i> that is issued a <i>dispatch instruction</i> for <i>reserve</i> in accordance with section 9.1.2 shall maintain unused <i>generation capacity</i> or <i>load</i> reduction capacity, as the case may be, during that <i>dispatch period</i> consistent with the <i>dispatch instructions</i> issued to it, so as to be able to increase <i>energy</i> production or decrease <i>energy</i> withdrawal, as the case may be, in accordance with sections 9.3.3 and 9.3.4 when a <i>contingency event</i> has occurred or is occurring.</p> <p>9.3.3 Where a <i>contingency event</i> has occurred or is occurring, each <i>reserve provider</i> that has been issued <i>dispatch instructions</i> pursuant to section 9.1.2 for primary <i>reserve</i>, shall respond <i>automatically</i> to a frequency drop by increasing <i>energy</i></p>	<p>9.3.1 The <i>dispatch instructions</i> for <i>reserve</i> issued to each applicable <i>dispatch coordinator</i> for or within a given <i>dispatch period</i>, as the case may be, shall indicate the amount of <i>reserve</i>, in MW, of each <i>reserve class</i> that, throughout the <i>dispatch period</i> unless an event that triggers a <i>reserve</i> response occurs in such <i>dispatch period</i>, is to be in a condition to respond to a fall in <i>PSO controlled system</i> frequency or to respond to a <i>dispatch instruction</i> issued pursuant to section 9.3.4 calling for additional <i>energy</i> production.</p> <p>9.3.2 Each <i>registered facility</i> that is issued a <i>dispatch instruction</i> for <i>reserve</i> in accordance with section 9.1.2 shall maintain unused <i>generation capacity</i> or <i>load</i> reduction capacity, as the case may be, during that <i>dispatch period</i> consistent with the <i>dispatch instructions</i> issued to it, so as to be able to increase <i>energy</i> production or decrease <i>energy</i> withdrawal, as the case may be, in accordance with sections 9.3.3 and 9.3.4 when a <i>contingency event</i> has occurred or is occurring.</p> <p>9.3.3 Where a <i>contingency event</i> has occurred or is occurring, each <i>reserve provider</i> that has been issued <i>dispatch instructions</i> pursuant to section 9.1.2 for primary <i>reserve</i>, shall respond <i>automatically</i> to a frequency drop by increasing <i>energy</i></p>	

Existing Market Rules (1 Jan 2019)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Rule Changes
<p>production or decreasing <i>energy</i> withdrawal by the amount specified in such <i>dispatch instructions</i> within the time and in accordance with the performance standards specified in section A.2 of Appendix 5A, until such time as further <i>dispatch instructions</i> are issued to it.</p>	<p>production or decreasing <i>energy</i> withdrawal by the amount specified in such <i>dispatch instructions</i> within the time and in accordance with the performance standards specified in section A.2 of Appendix 5A, until such time as further <i>dispatch instructions</i> are issued to it.</p>	
<p>9.3.4 Where a <i>contingency event</i> has occurred or is occurring, each <i>reserve provider</i> shall respond to any <i>dispatch instruction</i> that the <i>PSO</i> may issue pursuant to section 9.1.3 within the <i>dispatch period</i>, instructing the <i>registered facility</i> providing <i>reserve</i> to begin increasing <i>energy</i> production or decreasing <i>energy</i> withdrawal, as the case may be, and subject to section 4.13.1, up to the quantity specified in its <i>real-time dispatch schedule</i> for that <i>reserve class</i> within the time and in accordance with the performance standards specified in section A.2 of Appendix 5A.</p>	<p>9.3.4 Where a <i>contingency event</i> has occurred or is occurring, each <i>reserve provider</i> <u>that has been issued of <i>dispatch instruction</i> pursuant to section 9.1.2 for <i>contingency reserve</i></u> shall respond to any <i>dispatch instruction</i> that the <i>PSO</i> may issue pursuant to section 9.1.3 within the <i>dispatch period</i>, instructing the <i>registered facility</i> providing <i>reserve</i> to begin increasing <i>energy</i> production or decreasing <i>energy</i> withdrawal, as the case may be, and subject to section 4.13.1, up to the quantity specified in its <i>real-time dispatch schedule</i> for that <i>reserve class</i> within the time and in accordance with the performance standards specified in section A.2 of Appendix 5A.</p>	<p>To make it clear that the obligation to provide contingency reserve in response to a contingency event under section 9.3.4 is only for reserve providers that have been scheduled of contingency reserve.</p> <p>To make it clear that PSO's instruction to activate contingency reserve is not subject to section 9.1.3.</p>
<p>9.3.5 Where a <i>reserve provider</i> responds <i>automatically</i> to a <i>contingency event</i> or to a <i>dispatch instruction</i> from the <i>PSO</i> pursuant to section 9.3.3 or 9.3.4, it shall not for the purposes of section 9.6 be considered as departing from, or declared as non-</p>	<p>9.3.5 Where a <i>reserve provider</i> responds <i>automatically</i> to a <i>contingency event</i> or to a <i>dispatch instruction</i> from the <i>PSO</i> pursuant to section 9.3.3 or 9.3.4, it shall not for the purposes of section 9.6 be considered as departing from, or declared as non-</p>	

Existing Market Rules (1 Jan 2019)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Rule Changes
<p>conforming in respect of, any other <i>dispatch instructions</i> for energy or regulation for the same <i>dispatch period</i>.</p> <p>9.3.6 Notwithstanding anything to the contrary in section A.2 of Appendix 5A, if a <i>load registered facility</i> that is issued a <i>dispatch instruction</i> for reserve decreases energy withdrawal pursuant to the <i>market rules</i>, the <i>market manuals</i> or the <i>system operation manual</i>, its <i>load</i> shall not be restored until and unless directed or permitted by the <i>PSO</i> via a load restoration notice.</p>	<p>conforming in respect of, any other <i>dispatch instructions</i> for energy or regulation for the same <i>dispatch period</i>.</p> <p>9.3.6 Notwithstanding anything to the contrary in section A.2 of Appendix 5A, if a <i>load registered facility</i> that is issued a <i>dispatch instruction</i> for reserve decreases energy withdrawal pursuant to the <i>market rules</i>, the <i>market manuals</i> or the <i>system operation manual</i>, its <i>load</i> shall not be restored until and unless directed or permitted by the <i>PSO</i> via a load restoration notice.</p>	
	<p><u>9.3.7 A market participant for a load registered facility may make a request to the PSO for compensation in accordance with the procedure set forth in section 3.11 of Chapter 3 if:</u></p> <p><u>9.3.7.1 the load registered facility responded automatically to a contingency event in accordance with section 9.3.3, and the duration between the time of response and the time of a load restoration notice referred to in section 9.3.6 exceeds 120 minutes; or</u></p> <p><u>9.3.7.2 the load registered facility responded to a dispatch instruction from the PSO in accordance with section 9.3.4, and the duration between the time of issuance of such dispatch instruction and the time of a load</u></p>	<p>To allow a load registered facility to seek compensation if a load restoration notice is not issued within 120 minutes after the load registered facility is activated to provide primary and/or contingency reserve.</p>

Existing Market Rules (1 Jan 2019)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Rule Changes
	<p>restoration notice referred to in section 9.3.6 exceeds 120 minutes,</p> <p><u>provided that the <i>market participant</i> shall not be entitled to compensation for the initial 120-minute activation period.</u></p>	<p>To make it clear that a load registered facility is not entitled to compensation for its first 120-minutes of response to the activation of reserve.</p>