

**MINUTES OF THE RULES CHANGE PANEL
45th MEETING
HELD ON TUESDAY, 8 SEPTEMBER 2009 AT 10.05AM
AT ENERGY MARKET CO. PTE LTD
238A THOMSON ROAD #11-01
NOVENA SQUARE, SINGAPORE 307684**

Present:	Paul Poh (Chairman) Yeo Lai Hin Sim Meng Khuan Brendan Wauters Annie Tan Robin Langdale Dallon Kay	Michael Lim Philip Tan Pei Lip Dr. Goh Bee Hua Lawrence Lee Ng Meng Poh
Absent with apologies	Dave Carlson Chan Hung Kwan	
In Attendance: (EMC)	Tan Liang Ching Nerine Teo	Henry Wee Wang Jing

Mr. Dave Carlson, Chairman of the Rules Change Panel informed the Panel in writing that, as he will be away on an overseas trip during the week of 7 September 2009, he has nominated Mr. Paul Poh as Chairman of the RCP for the 45th Meeting on 8 September 2009. Mr. Poh accepted the nomination.

1.0 Notice of Meeting

The Chairman called the meeting to order at 10.05am. The Notice and Agenda of the meeting were taken as read.

2.0 Confirmation of Minutes of the 44th Rules Change Panel Meeting

The Minutes of the 44th Rules Change Panel meeting held on Tuesday, 7 July 2009 were tabled and taken as read.

As there were no amendments to the Minutes, the Rules Change Panel unanimously accepted and approved the Minutes.

3.0 Matters Arising

The Panel noted that the follow-up action was completed on the matters arising as outlined.

Minutes of 45th RCP Meeting – 8 September 2009

Action

3.1 Item 1 – Monitoring List on “Reserve and Regulation Payment to Non-Complying Units” (Paper No. EMC/RCP/14/2004/01)

Mr. Tan Liang Ching presented to the Panel that Reserve and Regulation payments are made based on scheduled quantities, which is determined prior to the dispatch period. However, if such providers (usually generators) trip before or during the dispatch period, they will still receive payments

A generator is unable to provide scheduled reserve/regulation if it:

- Trips before period scheduled for reserve/regulation and remains unavailable for period
- Trips during period
- Is unable to provide scheduled quantity when called upon

Under all three scenarios, the generator would create risks to system security rather than safeguard it. Thus there is no basis for payments (not even partial payment) to the unit.

EMC recommended that :

- Given small amount of payment to non-complying units, EMC proposed not to implement any system changes
- Previous RCP decision - Given combined settlement value of \$60 million for Reserve/Regulation, the threshold trigger for review was set at 1% (\$600,000) on a rolling 12-month basis
- Given Reserve payments are from Gencos to other Gencos, net effect of overpayment would smaller in long run

In reply to Mr. Langdale’s query, Mr. Tan said that the spike in reserve/regulation payments in May 2008 were due to a few scheduled units tripping when the reserve/regulation prices were very high.

The Chairman noted that over a long period of time, the net payments should not be skewed towards any particular generator. In any case, there is a mechanism whereby generators that trip frequently are penalised through their standing probability of failure (SPF) factors, which is in place to ensure that generators are incentivised to maintain reliable operations.

The Panel agreed to continue monitoring the issue rather than proceed with a rule change to claw-back reserve/regulation payments to non-complying units.

3.2 Item 1.2 – Update on Regulated Pricing under Price Separation (Paper No. EMC/RCP/45/2009/02)

Mr. Tan Liang Ching informed the Panel that on 19 January 2008 two planned outages led to price divergence for 46 periods and a high average USEP of \$562/MWh for the day. Type 4 price reruns were conducted for 11 of the periods and for the 35 remaining periods of price divergence, the USEP was reduced to \$401/MWh.

Minutes of 45th RCP Meeting – 8 September 2009

Action

The EMA asked EMC to conduct an MCE rerun simulating the transmission line on outage to be back in service. It was found that in 32 of the 35 periods there were no nodal price divergence. This implied that price separation during these periods could be largely explained by the transmission line outage. EMA concluded that their investigations did not uncover any indications of misbehaviour.

EMA then proposed to revise/impose minimum generation requirements on gencos that are the sole genco in any network block. In addition EMC will conduct re-runs for price-separation cases with outage lines assumed to be back in service. Administrative prices will apply if price separation persists while original prices will apply if price separation is resolved. However the industry had varied counter proposals to EMA's proposal. EMA maintained that its proposed solution was more appropriate

On 15 February 2008, EMC drafted the rule changes and sent them to EMA for consideration. On 28 May 2009, EMA responded to state that since the transmission line that caused the price separation incidents has been upgraded there is a reduced likelihood of future price separation incidents.

As there was no strong consensus from the industry on how best to manage price separation and that EMA will continue to monitor the situation, EMC recommended for the RCP to hold a watching brief over the price separation issue

Mr. Ng Meng Poh asked about the components to be used in the administrative pricing. Mr. Tan replied that EMA considered applying the vesting price for administrative pricing.

The Panel agreed to keep in view the price separation issue.

**3.3 Item 3.0 – Review of the amendment procedures for the SOM
(Paper No. EMC/RCP/44/2009/287)**

The Chairman informed that the Panel wrote to EMA on 20 July 2009 to ask whether the PSO's approval of the SOM constitutes approval from the EMA.

EMA responded on 6 August 2009 that the PSO is a division of EMA. The PSO will consult the industry on any changes to the SOM and the PSO will thereafter consider all inputs of MPs before deciding on the proposed SOM changes. The PSO's decision on SOM changes constitutes a decision by the EMA.

Minutes of 45th RCP Meeting – 8 September 2009

Action

Mr. Kay queried on whether the PSO engages other branches of EMA and/or the EMA Board in the consultation process.

Mr. Yeo replied that internal discussions are held within EMA and any changes to the SOM will be circulated to the industry for consultation in line with the current market rules.

Mr. Kay commented that the 10-day window period is tight for MPs to consider the implications of major SOM changes to their on-going businesses. He asked the Panel to consider if the PSO could follow some best practices in articulating the implications on SOM changes. He also commented that the PSO could also provide a cost benefit analysis to be released to the industry for consultation.

Mr. Yeo replied that whenever there are new changes in operational or testing requirements, consultations are held within the industry to get their feedback before implementation. He added that this was the case when PSO introduced IL into the market. A series of forum was conducted before the actual implementation. He further explained that unless there were urgent operational requirements, PSO would seek industry consultation before making significant changes to the SOM as in the case of period-based Regulation Reserve requirement.

Mr. Ng Meng Poh commented that based on EMA's response, the RCP should not be involved in the review of the SOM.

Mr. Philip Tan opined that the RCP should not give directions to the PSO on how they should run their processes. Mr. Kay however felt that the SOM is a critical component of the industry structure and the RCP should seek to streamline that process.

Mr. Langdale suggested that the RCP should conclude by stating that the Panel should not be involved with the review of amendments to the SOM.

However the Panel requested PSO to look into how the consultation process for SOM changes could be enhanced, so that all stakeholders could engage PSO in a meaningful and constructive discussion on the proposed changes. In cases where SOM changes need to be implemented urgently, PSO can conduct post-implementation consultations and fine-tune the changes as appropriate based on the feedback received.

The Panel agreed to Mr. Langdale's conclusion.

Mr Yeo noted the Panel's conclusion and would inform PSO of the Panel's suggestion.

Minutes of 45th RCP Meeting – 8 September 2009

Action

On page 7 of 9 of the Minutes of the 44th RCP Meeting, Mr. Ng agreed that the PSO conducted consultation and SembCogen would welcome more rigorous debate on the issue of reduction in regulation requirement. As event has taken its course, Mr Ng suggested that the matter be treated as closed. . Mr Yeo agreed to Mr Ng's suggestion to close the matter.

4.0 Monitoring List

The Panel noted the contents of the paper.

5.0 Summary of Outstanding Rule Changes

The Panel noted the contents of the paper.

6.0 Rules Change Workplan Status Update

The Panel noted the contents of the paper.

7.0 Disqualification of Banker's Guarantees issued by the SWEM Clearing Bank as Credit Support (Paper No. EMC/RCP/45/2009/285)

Mr. Tan Liang Chiang informed the Panel that EMC analyzed its proposal to require that Banker's Guarantees (BGs) are not drawn from the SWEM clearing bank so as to manage concentration risk in the event of clearing bank failure

Concentration risk exists when BGs are drawn from SWEM clearing bank:

- If Clearing Bank and MP default – settlement accounts funds frozen, and BGs from Clearing Bank at risk (cannot be drawn)
- If only Clearing Bank defaults – settlement accounts funds frozen, MPs to reissue BGs
- If only MP defaults – EMC draw upon BGs to pay off MP's financial liabilities

Mr. Langdale noted that the concentration risk is high and asked if there is a mechanism by which BGs are spread over several banks. Mr. Tan replied that this is a possible alternative approach but not discussed specifically in the paper.

Mr. Lawrence Lee informed that quotes for BGs obtained by the MSSL indicated OCBC still offers one of the lowest rates as compared to other local/foreign banks. By moving to the next higher band of quotes, there will be an increase in its cost by \$500,000 or more, which will be passed on to consumers. The MSSL had evaluated the various quotes obtained and is of the opinion that BGs drawn from the SWEM clearing bank should not be disqualified.

Minutes of 45th RCP Meeting – 8 September 2009

Action

Mr. Langdale said that whichever bank that the MSSL goes to for the \$200m BG, the concentration risk will still be centred on one other particular bank unless MSSL's BGs are spread out.

Mr. Langdale suggested changing the rule to subject BGs to the acceptance of EMC so that EMC can manage their concentration risk across various banks

Mr Lawrence Lee added that the MSSL believe it may not be fair for them or the market to be required to use a few banks to issue BGs. In choosing a bank to issue BGs, the MSSL will consider the bank's administrative fees, the bank's credit rating and the bank's relationship and support within the group of companies. In addition, if banks realise that the market needs to have BGs issued by more than one bank, the banks may increase their administrative fees for issuance of BGs to the market.

Both Mr. Philip Tan and Mr. Sim opined that despite the high concentration of BGs in a single bank, default to the market will occur only if both the MP and the bank default simultaneously. Thus the risk is not high. The Panel also noted that EMC only accepts BGs from banks with a S&P rating of "A" or better.

Mr. Wauters suggested for EMC to monitor the distribution of the BGs and for the MSSL and other MPs to, at their own accord, reduce their concentration risk with banks.

Given the significant costs and minimal benefits, the RCP decided not to support the proposal to disqualify BGs drawn from the clearing bank. The Panel decided instead to closely monitor the BG concentration and ratings of the BG-issuing banks.

EMC

8.0 Amendments to requirements for transfer of registration of registered facilities (Paper No. EMC/RCP/45/2009/289)

Mr. Philip Tan asked to abstain from the discussion.

Ms. Wang informed the Panel that the market rules provide for a market participant (MP) to transfer the registration of the registered facilities if:

- the request for transfer is submitted at least 10 business days before the proposed date of transfer; and
- on the date the request is submitted, the proposed transferee is a MP and not a suspended MP.

Minutes of 45th RCP Meeting – 8 September 2009

Action

In a corporate restructuring where an existing MP (A) transfers its generation business to a new company (B) the above rules creates a problem. This is because the proposed transferee (B) must be registered as a MP at least 10 business days before the transfer. However this is not feasible as EMA cannot issue overlapping electricity licenses in such case. Thus, the transfer of registration can only be effected 10 business days after the transferee (B) with the generation license is registered as a MP, the transferor (A) would not be able to generate during the 10 business days as it would not have a generation license. This would have serious commercial implications for the generation company and also the market if the capacity of generation facilities to be transferred is large.

To address the above issue, EMC proposed amendments to the market rules to reflect the following objectives.

- 1) Allow a person, who is not a MP, to be identified as a proposed transferee if:
 - a) the person has applied to the EMC for registration as a MP; and
 - b) the EMC is satisfied that he is likely to meet all the requirements for MP registration on the proposed date of transfer.
 - c) the transferee would only be required to hold a valid and relevant electricity license and be a MP (but not a suspended MP) on the date of transfer
- 2) Allow EMC and the transferor/transferee to change effective date of transfer if all parties to the transfer can agree. (The current rules only allow EMC to effect the transfer either on the original proposed date or on the 10th business day after EMC is satisfied that all the requirements have been met. This is rigid and operationally difficult to coordinate among various parties.)

Amendments to the Market Administration Market Manual (Part 4) are proposed for consistency with the market rules. It was concluded that these amendments would ensure seamless transfer of registered facilities without interrupting the physical operation of the facilities.

Other than Mr. Philip Tan who abstained, the rest of the Panel **supported** EMC's recommendation to amend Chapter 2 and Chapter 3 of the Market Rules and Market Administration Market Manual (Part 4) and will make the necessary recommendation to the EMC Board for adoption.

Minutes of 45th RCP Meeting – 8 September 2009

Action

9.0 Mixed Integer Programming (MIP)-based Modeling of Reserve Constraints (Paper No. EMC/RCP/45/2009/282)

Ms. Nerine Teo informed the Panel that currently GRFs operating from the No Load to the below Low Load zone may be scheduled to provide reserve even though they are physically incapable of doing so. This is due to the limitations of existing Linear Programming (LP) formulations in modeling a non-convex solution space.

This raised security concerns as scheduled GRFs operating below Low Load will be unable to provide reserve should they be called upon (e.g. in the event of a forced outage). It also raised equity issues as such GRFs are paid for a service that they are, in essence, not able to provide.

The proposed rule change introduced the use of Mixed Integer Programming (MIP) to remodel this portion of the reserve envelope such that GRFs operating from the No Load to below Low Load zone will be disqualified from providing reserve. The proposed MIP constraints will only apply to primary and secondary reserves as a GRF is most likely able to ramp up its unit to Low Load within the 10-minute stipulated response time to provide contingency reserve.

The initial proposed MIP constraints disqualifies some GRFs that are able to provide reserve even when operating on a half-block mode. As such, the Technical Work Group reviewed 6 half-block modeling options to enable these GRFs to provide reserve when operating on half-block. The TWG recommended that the RCP support Option 0 as this is relatively inexpensive and simple to operationalise for MPs, PSO and EMC. More complex options can be considered in the future if the need arises.

The TWG also recommended that the RCP **support** the proposed MIP constraints and apply them to the class of primary and secondary reserves only. Consideration to apply these constraints to contingency reserve can be reviewed in the future if the need arises.

Mr. Philip Tan commented that there may be instances whereby the GRF is unable to provide reserve when transiting from a half-block to a full-block mode. The GRF might actually be scheduled to provide reserve during these periods of transition under Option 0.

Mr Yeo Lai Hin replied that based on experience, the GRFs have not offered beyond their reserve capability during such periods of transitions.

Mr. Wauters added that Senoko still prefers Option 1 as conveyed during the Technical Working Group discussions. He also suggested that the implementation details under Option 0, such as which half-block Low Load value should be registered, be reflected in the Market Rules.

Minutes of 45th RCP Meeting – 8 September 2009

Action

The Chairman replied that currently all technical-specific details under registration are endorsed by the PSO and submitted to EMC only following testing. As such, it is not appropriate to introduce these details into the Market Rules.

Mr. Kay asked if an analysis was conducted when MIP is implemented for contingency reserve and what is the net cost or benefit to the entire market. He asked that if MIP is applied to contingency reserve will there be a net cost increase or cost decrease across the entire market. The Chairman informed that the test was conducted excluding the contingency reserve.

Mr. Kay was of the view that ILs can respond within 10 minutes. If MIP does not apply to contingency class for GRFs, ILs will be prevented from applying the same response.

The Chairman suggested that this issue be addressed on a separate issue

Mr. Brendan Wauters asked to abstain when the Panel was called to vote.

Other than Mr. Wauters who chose to abstain from the vote, the Panel **supported** EMC's recommendation to implement Option 0 as the half-block modelling solution and also the implementation of the proposed MIP constraints and apply them to the class of primary and secondary reserves. The Panel also supported the rule modification to amend Sections D.3, D.4, D.9B and D.17.2.8 of Appendix 6D of Chapter 6 of the Market Rules and will make the necessary recommendation to the EMC Board for adoption.

10.0 Review of EMC fees on IL providers
(Paper EMC/RCP/45/2009/CP20)

The Panel was informed that during the 2009 RCP Work Plan Prioritization exercise, a proposal was received suggesting that Interruptible Load (ILs) providers of Reserve should be subjected to EMC fees, since they receive services from these two organizations. This study reviewed the original principles behind the current EMC fee recovery mechanism and analyses the merit of recovering EMC fees from ILs based on the nature of services that EMC provides to them. As the current EMC fee recovery mechanism was approved by the EMA, any proposed changes will have to be approved by the EMA.

Mr. Henry Wee informed the Panel that the study concluded that extending EMC fees to reserve and regulation providers will have no material improvement to economic efficiency but will come with additional system costs and resources. The paper recommended that the current method of charging EMC fees be kept status quo.

Minutes of 45th RCP Meeting – 8 September 2009

Action

Mr. Philip Tan asked EMC to provide an analysis on one-time start-up costs, system costs and running costs for the Panel's further consideration. It is the incremental costs and how that should be attributed to be charged to support ILs. The Chairman informed that EMC will not be able to provide running cost as EMC does not track who it is servicing.

The Chairman opined whether it is appropriate to charge specific players the cost of changes since the current EMC fee methodology was charged based on common services across the market to avoid barriers to entry.

Mr. Kay emphasized that IL was not in the original market design and IL was implemented after market start. The costs incurred by ILs should be incremental and not additional and is an insignificant number.

Mr. Yeo added that based on "Causer Pay" principle, IL providers should also be charged with the PSO fee. Reason being that PSO is also providing service to the IL providers. E.g. cost of setting up Interruptible Load Management System (ILMS), compliance monitoring & reporting, dispatching, etc.

The following Panel members VOTED to support for more information on the total one-time start-up costs incurred by EMC for ILs' initial market entry:

Mr. Philip Tan

(representative of the Generation Licensee class of market participant)

Ms. Annie Tan

(representative of the Retail Electricity Licensee class of market participant)

Mr. Michael Lim

(representative of the consumers of electricity in Singapore)

Mr. Yeo Lai Hin

(representative of the PSO)

Mr. Ng Meng Poh

(representative of the Retail Electricity Licensee class of market participant)

Minutes of 45th RCP Meeting – 8 September 2009

Action

The following Panel members VOTED NOT to support for more information on the total one-time start-up costs incurred by EMC for ILs' initial market entry:

Mr. Dallon Kay
(representative of the wholesale electricity market trader class of market participant)

Mr. Kenneth Lim
(employee of the EMC not being the Chief Executive)

Mr. Robin Langdale
(representative experienced in financial matters in Singapore)

Dr. Goh Bee Hua
(representative of the consumers of electricity in Singapore)

Mr Lawrence Lee abstained from the voting.

The Chairman summarized the results of the voting and by majority, EMC will provide more information on the total one-time start-up costs incurred by EMC for ILs' market entry.

EMC

(Mr. Dallon Kay and Dr. Goh Bee Hua took leave of the meeting for a scheduled engagement.)

The Panel invited Ms. Coco Choo, CFO of EMC to the meeting.

11.0 Cost of System changes to implement EMA's directive to tender a portion of the Non-Contestable Load
(Paper No. EMC/RCP/45/2009/07)

Mr. Kenneth Lim of EMC informed the Panel that EMA consulted the industry in April 2009 on EMA's intention to tender out a portion of the load of non-contestable customers. EMA initiated discussion with EMC and the MSSL on changes required to support the above intention.

EMA intend to call for the tender tentatively scheduled for November 2009 and the tender is expected to take effect in April 2010.

Mr. Lim said that the impact on the NEMS settlement system will be:

- Additional information required in the directive to reflect the Vesting Contract details
- Settlement system processing and validation of the Vesting Contract to support this additional information
- New market rules governing VCSC and VCRP formula into the settlement system
- Newly computed information to database for the generation of settlement information and reports.
- Enhancement on the frontend user interface for verification and validations.

Minutes of 45th RCP Meeting – 8 September 2009

Action

- MP-API/WebService
 - Enhancements to the existing list of settlement reports would be required.
 - Formulation queries to these reports will be enhanced to include the additional information.
 - The above changes will be made at different modules to support both MP-API and WebService.
- Data Warehouse
 - Changes required to incorporate new data elements into the warehouse.
 - queries to the database for formulating the VCSC reports will be enhanced.
 - Transformation processing of the data warehouse will require changes

The Panel was informed that the cost of work will consist of:

Development work (Data warehouse/MP-API/Web services/ Settlement engine)	S\$265,400
Audit Cost	S\$ 21,000
Total	S\$286,400

One-time Capital Expenditure	S\$ 41,000
- Hardware & OS Licenses	S\$99,142
- Middleware Licenses	

Operating Expenditure	S\$22,400 per annum
- Hardware Maintenance	
- Middleware Licenses	

EMC will be claiming from the Market on the development work costs of S\$286,400 and the 6 months of additional maintenance and license costs of \$11,200.

The Panel noted the contents of the paper with no further comments.

There being no other matters, the meeting ended at 1.00pm with a vote of thanks to the Chair.

Paul Poh
Chairman

Minutes taken by:
Eunice Koh
Senior Executive - Corporate Secretariat

Approved at the 46th RCP Meeting
held on 3 November 2009