1.0 Notice of Meeting

The Chairman called the meeting to order at 10.15am. The Notice and Agenda of the meeting were taken as read.

2.0 Confirmation of Minutes of the 6th Rules Change Panel Meeting

The Minutes of the 6th Rules Change Panel Meeting held on Wednesday, 9th July 2003 was tabled and having been previously circulated was taken as read.

The following amendments are to be made to the Minutes.

Page 2, Matters Arising Item 5.0 – Market Advisories - Paragraph 3, 2nd Line – delete the word “adversary” and replace with “advisory”.

Page 3, Item 4.0 – Publication of RCP’s Review Report – Paragraph 3, 6th Line – insert a colon after the word “published”

Subject to the above amendments to the Minutes, the Rules Change Panel unanimously accepted and approved the Minutes.

3.0 Matters Arising from the 6th Rules Change Panel Meeting

Item 6.0 Proposed Use of weighted average MEP to replace USEP as the VCRP (Paper No.: EMC/RCP/05/2003/204)

Mr. Paul Poh advised the Panel that EMA had asked EMC to review the proposed rule change submission. EMC has suggestion to a modification to the formula used to compute VCRP.
7th Rules Change Panel Meeting

The Panel was requested to refer to Paper No. EMC/RCP/05/204 (Revised). EMC also presented the findings on the study on the use of weighted average MEP as VCRP for a trading period marked by high MEPs across all Gencos' MNNs. Please also refer to the Minutes under “Any Other Matters” for details.

3.0 Summary of Rules Modification Submissions

The Panel requested EMC to provide a Table with the Total Number of outstanding submissions in each category.

EMC has taken note of this request.

4.0 Paper No.: EMC/RCP/05/2003/204 (Revised) – Proposed Use of Weighted Average MEP to replace USEP as the VCRP

EMC had in the 5th RCP meeting presented a rule change paper on the proposed use of weighted average MEP to replace USEP as the VCRP. The proposal was supported by the Panel. However, EMA did not approve the rule change proposal because consumer’s interests are not adequately protected when there is energy withdrawal at generator node with high MEP.

EMC illustrated a case when a Genco intentionally tripped its generator and withdrew station load at its node with high MEP and managed its injection at other nodes with normal MEPs. This could give rise to a huge negative VCRP and hence, a huge VCSC, for that Genco. This revised submission is to address EMA’s concern and EMC suggested that the original computation of VCRP be revised to ignore negative IEQ in the VCRP.

The revised rule change will no longer ensure that both Gencos and MSSL will effectively settle at HP for each HQ when negative IEQ occurs. However, such an impact is likely to be insignificant in reality because typically negative IEQ is small relative to amount of energy injected.

The Panel noted EMC’s proposed revision to the original rule change. It indicated that the revised rule change proposal would be supported, subject to satisfactory outcome of the analysis on the three additional cases it had requested (see “Any Other Business” for more details). EMC would provide the Panel with the required analysis by circulation.

The Panel supported EMC’s recommendation, subject to analysis being accepted by the Panel and to make the necessary recommendation to the EMC Board for endorsement.

[Post Meeting Note: EMC circulated the required analysis, together with the relevant supporting documents, to the Panel on Tuesday, 9th September. All the Panel member’s that were present at the 7th RCP meeting supported the rule change after receiving the analysis]
5.0 Paper No.: EMC/RCP/07/2003/207 – Modifying Reserve Modeling in the Market Clearing Formulation

EMC presented a rule modification proposal submitted by the PSO to modify representation of reserves in the Market Clearing Engine (MCE) (Chapter 6, Appendix 6D Sections D.3, D.4.1, D9B, D17.2, D21.1 and Appendix 6E Sections E1.1).

Currently in real time, the MCE schedules reserves from Generation Registered Facilities (GRF) that may be higher than the actual reserve capabilities of GRFs. Thus, in the event of GRFs tripping, this poses a threat to system security as there may be insufficient reserve to arrest frequency dip or restore the frequency to acceptable limit. In the PSO’s view, the proposal essentially is to reduce this risk to a manageable level. EMC’s analysis indicated that this proposal may result in a slight increase to the cost to the market assuming offers remain unchanged. This rule change would involve significant changes to the MCE and database systems. The trade off between reduced system security risk and higher cost is considered justified.

The Panel was informed that it would take about two man-months to do the changes to the MCE and this would be done by internal EMC staff and EMC’s contracted support for the MCE. EMC expects the implementation of these changes to take place in early November 2003.

EMC presented an indicative study assuming no changes in offers that were carried out for an average of 4 days of data to take into account connection and disconnection of the intertie. Further, these days represent weekday and weekend load scenarios.

EMC’s findings showed that when the intertie to Malaysia is disconnected the total value of all produces (i.e. Energy+Reserve+Regulation) increases by about 1.44% to 2.75%, while with the intertie connected the values increases by about 0.03% to 0.09%. The USEP, Regulation and Contingency reserve prices were hardly affected by the inclusion of new constraints while primary and secondary reserve prices showed a slight increase.

The Panel was informed that there was an intertie disconnection for a period of three weeks. The increase cost to the market would be about $1.5m to $3.0m during such a time. Under normal circumstances when the intertie is connected, increase in cost would be about $0.6m to $1.5m per year.

The Panel requested EMC to make data comparisons for Thursday/Thursday periods and Sunday/Sunday periods. In the paper.

The Chairman advised the Panel that EMC would run training information forums for the gencos and market participants to understand the implications of these changes to the MCE.

The Panel supported EMC’s recommendations to the proposed rules change and to make the necessary recommendation to the EMC Board for endorsement.
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6.0 Paper No.: EMC/RCP/07/2003/208 – Cross Referencing Error

EMC presented a rule modification proposal submitted by EMC on a cross reference error in Chapter 2, Section 12.1.4 and 12.1.5.

The Panel supported EMC’s recommendations to the proposed rules change and to make the necessary recommendation to the EMC Board for endorsement.

7.0 Paper No. EMC/RCP/07/2003/209 – Margin Call excluding an outlier in the computation of Estimated Net Exposure

EMC presented a rule modification proposal submitted by the MSSL to exclude an outlier (Section 2.2 of the Market Operations Market Manual [Prudential Requirement]) completely from the estimated net exposure (ENE), determined in accordance with the market manual, when wholesale energy price increases dramatically in a single day due to a one-off event.

However, EMC pointed out that an outlier should be captured in the ENE as the “Current Exposure” component which represents the known outstanding amount owed to EMC by a MP. MSSL’s proposal would underestimate the ENE and the MP’s liability. This may also result in the under-provision of credit support by a market participant, thereby exposing EMC and other MPs to a higher risk of payment default by that MP.

However, EMC also highlighted that there are limitations to the current computation of ENE. The formula prescribed in the market manual is fixed and does not take into consideration the relevant market risks and conditions associated with a MP. In addition, the current exposure of a MP is used to estimate a MP’s unknown remaining 8-day exposure and this could lead to a MP’s exposure being over-stated when there is an outlier. Hence, there is need for EMC to exercise judgement in calculating the appropriate ENE for a MP that is reflective of on-going market risks and conditions.

Therefore EMC proposed that Chapter 2, Section 7.2.2 of the Market Rules be modified as:

“Chapter 2, Section 7.2.2 (addition marked by underline)

A market participant’s estimated net exposure shall be estimated by the EMC each business day and shall be a dollar amount estimated in accordance with the procedure specified in the market manual or such other procedure as EMC may determine in its sole and absolute discretion.”

Mr. Seow Kang Seng expressed concerns that MSSL is required to purchase electricity from the wholesale market on behalf of all non-contestable consumers and all non-market participant retailers/contestable consumers and the amounts of such purchases are much larger than those by the retailers, MSSL is adversely affected when there is a substantial margin call arising from an outlier due to the tripping of generators. In this instance, MSSL would need to provide a huge amount of credit support at a very short notice. Such incidents had occurred a few times since the start of the new wholesale electricity market in January 2003.
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The Panel noted Mr Seow’s concern and agreed that ENE should not be determined rigidly. However, the Panel had reservations about the use of “sole and absolute discretion” by EMC as stated in EMC’s proposed modifications.

After much debate Mr Robin Langdale summarised the Panel concerns that “sole and absolute discretion” infers that EMC need not explain its actions. It is important that there should be a dynamic about reasonableness. The Panel would like EMC to explore how EMC’s proposed modification could be revised to address the concerns of the Panel. Mr. Langdale suggested that EMC make a study if it is feasible for it to state those circumstances under which the discretion would be exercised and how but that there should remain some ultimate flexibility for EMC to use its discretion in unforeseen circumstances.

EMC will study the Panel’s suggestions and revert to the Panel with a revised rule modification at the next Panel meeting.

8.0 Paper No.: EMC/RCP/07/2003/211 Formula for Apportionment of Default Levy

EMC presented a rule modification proposal submitted by EMC to amend the existing formula for apportioning default levy to non-defaulting market participants (Chapter 2, Sections 9.6.1 and 9.10.4 and Chapter 8, Section 1.1.43). The amendment will make the numerator of the formula ratio consistent with its denominator, resulting in the individual’s shares of non-defaulting MPs summing to unity.

The share of the amount of default levy to be accorded to a non-defaulting MP is a ratio of its net transaction amount to the total net transaction dollar amount for the entire market (less that of the defaulting MP). Currently, the net transaction dollar amount calculated for the non-defaulting MP on the numerator excludes any amounts payable on account of financial penalties or damages. These amounts are not excluded from the denominator.

Leaving the rule unchanged would lead to over or under-recovery of the actual default amount because the shares of every non-defaulting MP will not sum to unity. This happens when there are financial penalties or damages payable on the trading day that the default took place.

EMC proposal is to exclude financial penalties from the denominator.

The Panel supported EMC’s recommendations to the proposed rules change and to make the necessary recommendation to the EMC Board for endorsement.
9.0 Paper No.: EMC/RCP/07/2003/212 – Outage Data used for real time and forecast schedules

EMC presented a rule modification proposal submitted by EMC to modify the use of network status file and outage schedule file for the real time schedule (RTS) and forecast runs (I.E. Pre Dispatch Schedule and Market Outlook Scenerio) (Chapter 6, Appendix 6D, Section D.6.1)

The proposed solution is to use network status (NWSTAT) file alone for RTS run while using the outage schedule file alone for other forecast runs (PDS and MOS) when deriving the dispatch network.

The rationale is to ensure that most relevant information is used for deriving the dispatch network for various dispatch runs.

The Panel supported EMC’s recommendations to the proposed rules change and to make the necessary recommendation to the EMC Board for endorsement.

10.0 Rule Change Prioritization Exercise (Paper No.: EMC/RCP/07/2003/01)

To assist the Panel in prioritizing its work plan for the next 12 – 24 months, EMC has identified a number of market design issues and has prepared a draft work plan for the Panel’s consideration. The “Rule Change Work Plan” will form the basis for the consultation with the key stakeholders.

EMC recommends that the Panel authorize that EMC commence a consultative process regarding the Panel’s work plan based on the draft “Rule Change Work Plan”

The Panel supported EMC’s recommendations to the proposed work plan and requested EMC to have all Minutes of meetings recorded for the Panel’s information. After consultation with the stakeholders, EMC will be required to submit the finalised document for the Panel’s consideration.

The Panel invited Mr. Tan Zing Yuen and Mr. Gan Bock Yeng of EMC to the meeting.

11.0 EMC Financial Performance for the Quarter 1 January to 31 March 2003 (Paper No.: EMC/RCP/07/2003/02)

Mr. Tan Zing Yuen presented a paper on EMC’s Financial Performance for the Quarter 1 January to 31 March 2003 to the Panel. This relates to the operation of the National Electricity Market of Singapore for the last financial year-ended 31 March 2003.
The financial performance of the Company for the period 1 January 2003 to 31 March 2003 is as follows:

<table>
<thead>
<tr>
<th></th>
<th>Budget $m</th>
<th>Actual $m</th>
<th>Variance $m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manpower</td>
<td>1.98</td>
<td>1.70</td>
<td>0.28</td>
</tr>
<tr>
<td>Legal</td>
<td>0.29</td>
<td>0.12</td>
<td>0.17</td>
</tr>
<tr>
<td>Interest expense</td>
<td>0.18</td>
<td>0.06</td>
<td>0.12</td>
</tr>
<tr>
<td>Systems expenses</td>
<td>1.22</td>
<td>1.08</td>
<td>0.14</td>
</tr>
<tr>
<td>Metering services</td>
<td>0.30</td>
<td>0.03</td>
<td>0.27</td>
</tr>
<tr>
<td>Market licence fee</td>
<td>2.13</td>
<td>2.13</td>
<td>0.00</td>
</tr>
<tr>
<td>Depreciation and amortisation</td>
<td>1.72</td>
<td>1.63</td>
<td>0.09</td>
</tr>
<tr>
<td>Others</td>
<td>1.16</td>
<td>0.99</td>
<td>0.17</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td><strong>8.98</strong></td>
<td><strong>7.74</strong></td>
<td><strong>1.24</strong></td>
</tr>
<tr>
<td>Administrative margin</td>
<td>0.79</td>
<td>0.69</td>
<td>0.10</td>
</tr>
<tr>
<td><strong>Total fees</strong></td>
<td><strong>9.77</strong></td>
<td><strong>8.43</strong></td>
<td><strong>1.34</strong></td>
</tr>
</tbody>
</table>

**Reasons for variance**

1. Manpower
   - Due to lower headcount, 46 instead of the budget of 52;
   - Lower salaries for certain positions

2. Legal
   - Most of the work has been completed before the market start.

3. Interest expense
   - The interest rate for the bank loan was 1.43% compared to the budgeted rate of 4%.

4. Systems
   - Certain expenses were deferred to the new financial year.

5. Metering services
   - It was agreed by EMA and Powergrid that the rental and maintenance costs would not be borne by EMC.

**Over-recovery**

The total over-recovery in fees for the period 1 January 2003 to 31 March 2003 amounted to $1,341,380.

Under the current fee methodology, any over-recovery should be repaid to the market by altering the amount of fees to be collected in the next period.
This over-recovery will therefore be refunded to the market participants in the current financial year through the reduction in the fees to be collected for the period 1 October 2003 to 31 March 2004.

The Panel was informed that any interest earned from the over-recovery will also be refunded to the market participants.

The Panel noted the contents of the paper and requested EMC to publish the Financial Performance Report on EMC's website.

12.0 Any Other Business

Analysis of Basis Risk

Mr Paul Poh circulated and presented the findings of a study of the use of weighted average MEP (WMEP) as the vesting contract reference price (VCRP), using actual settlement data for a trading period where the MEPs were consistently high across all Gencos’ MNNs. with 65% of WEQ vested on three gencos based on installed capacity.

The analysis distinguished between the energy price paid to Gencos and that paid by loads (retailers) for both the vested and unvested energy quantities. The results are summarized as follows:

**Scenario 1: When no vesting contracts credit was applied**

There exists a difference in effective price (per MWh) between that paid to Gencos and that paid by loads for the vested and unvested quantities. This differential reflects the 'settlement surplus' that is returned to loads. “Settlement surplus” arises because, by market design, marginal losses (i.e. nodal prices which reflect marginal losses and economic rents from congestion) exceed average losses (i.e. power flow losses).

**Scenario 2: When vesting contract settlement credit (VCSC) was applied using the WMEP of vested gencos as the VCRP**

It is shown that:

(a) the effective price (per MWh) paid to gencos is equal to the Hedge price (HP) for the vested quantity, i.e. vesting contract works as designed;
(b) the effective price (per MWh) paid to gencos and by loads remains the same for the unvested quantity as expected;
(c) the difference in effective price (per MWh) between that paid to Gencos and that paid by loads for the vested and unvested quantities remains the same (i.e. reflecting that ‘settlement surplus’ is returned to loads, by market design).
**Scenario 3: When VCSC was applied using USEP as the VCRP**

It is shown that:

a) the effective price (per MWh) paid to gencos is not equal to the Hedge Price (HP) for the vested quantity. The difference between the effective price paid to gencos using USEP as the VCRP and the HP is the same as that between USEP and WMEP of the vested gencos. This is consistent with the analysis that using USEP as the VCRP is flawed because, by design, USEP is higher than WMEP (difference between marginal and average losses) and hence, gencos will always be paid less than HP;

(b) the effective price (per MWh) paid to gencos and by loads remains the same for the unvested quantity as expected;

(c) the difference in effective price (per MWh) between that paid to Gencos and that paid by loads for the vested and unvested quantities remains the same (again, reflecting that ‘settlement surplus’ is returned to loads by design).

Since the price difference per MWh between that paid to Gencos and that paid by loads for the vested and unvested portion remains the same for all above three scenarios, this showed that there is no change in relative position between gencos and loads in using weighted average MEP as the VCRP.

The difference in the effective price per MWh paid by loads when weighted average MEP is used as the VCRP and that when USEP is used as the VCRP is the same as that between USEP and weighted average MEP. This is the only change in relative position between Gencos and loads for the vested quantity. However, this change reflects the shortcoming of using USEP as the VCRP and it can be eliminated by using weighted average MEP to replace USEP as the VCRP or alternatively, by implementing FTR.

The Panel noted the above findings. It requested EMC (Market Administration) to extend the analysis to the following 3 cases:

1. when all MEPs are zero;
2. when all MEPs are negative; and
3. when MEPs are high only for a particular Genco’s MNNs.

The Panel agreed that paper EMC/RCP/05/2004/204 (Revised) will be supported, subject to the findings for the case of high MEPs across all Gencos’ MNNs being also valid for the above 3 requested cases. The analysis for these 3 cases will be given to the Panel by circulation once it is completed.
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13.0 Date of Next Panel Meeting

The next Panel meeting is scheduled to be held on 30th September 2003 at 10.00am at the EMC Board Room.

There being no other matters, the meeting ended at 12.45pm with a vote of thanks to the Chair.

ALLAN DAWSON
Chairman

EUNICE KOH
Market Panel Administrator