MINUTES OF THE RULES CHANGE PANEL
11th PANEL MEETING
HELD ON TUESDAY, 06 JANUARY 2004 AT 10.15AM
AT ENERGY MARKET CO. PTE LTD
9 RAFFLES PLACE #22-01
REPUBLIC PLAZA, SINGAPORE 048619

Present: Allan Dawson (Chairman) Eu Pui Sun
Yip Pak Ling Lee Sin Chong
Ben Lau Tan Boon Leng
Robin Langdale Dr. Daniel Cheng
T P Manohar

Absent with Kok Shook Kwong Francis J. Gomez
Apologies:

In Attendance: Paul Poh, EMC Poa Tiong Siaw, EMC
Shashank Swan, EMC Teo Wee Guan, EMC

By Invitation: Tan Zing Yuen, EMC Gan Bock Yeng, EMC

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 10th Rules Change Panel Meeting

The Minutes of the 10th Rules Change Panel Meeting held on Friday, 5 December 2003 was tabled and having previously been circulated was taken as read.

There being no amendments to the Minutes, the Rules Change Panel unanimously accepted and approved the Minutes.

3.0 Matters Arising from the 10th Rules Change Panel Meeting

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

Mr. Paul Poh informed the Panel that while EMC’s proposed method is simpler, it does have implications on Market Operations’ work procedures. EMC requires more time to study all possible impact of the proposed method and to work out all necessary changes required to implement the proposed method to calculate the ENE where outliers are excluded.

Action by

Approved at the 12th RCP Meeting
held on 15 March 2004
<table>
<thead>
<tr>
<th>Item</th>
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<tbody>
<tr>
<td>Item 5.0 Informing MSSL when a retailer is in default or suspension/termination process (Paper No. EMC/RCP/10/2003/225)</td>
<td>EMC</td>
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<td>Item 7.0 EMC Information Policy (Paper No. EMC/RCP/10/2003/01)</td>
<td>EMC</td>
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<tr>
<td>Item 8.0 Modification to System Operation Manual (Paper No. EMC/RCP/10/2003/02)</td>
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EMC presented the Market Surveillance and Compliance Panel (MSCP) rule modification proposal to clarify the rules governing offer changes made within 4 hours of gate closure. The current rules were found to lack clarity regarding circumstances under which offer variations are permitted, forms of offer variations, and compliance and enforcement of the gate closure rule.

In the first ten months following market start, over 6500 instances of gate closure violation were reported. In investigating these reports, the MSCP felt that the rules governing offer changes made within gate closure lacked clarity. The MSCP proposed the following amendments to Section 10.4 of Chapter 6 and Section 4.6.15 of Chapter 3:

1. Remove reference that there is no “tolerance” for offer changes made within the gate closure;
2. Prohibit changes in price for offer changes made within the gate closure period, except for additional quantities offered during a shortfall situation;
3. Allow offer changes within gate closure to reflect revised capability of a unit “following a forced outage” instead of “during a forced outage”;
4. Remove (i) reduced prices and (ii) positive contribution to the resolution of energy surplus situations as permissible exceptions to violation of gate closure;
5. Be explicit that an offer change made within gate closure constitutes a rule breach unless it falls within some exceptions; and
6. Remove section 4.6.15 of Chapter 3 which gives uncertainty to the MSCP’s authority in investigating instances of violation of offer change limits.

In essence, the MSCP’s 6 proposals address clarity issues concerning

- Circumstances under which offer variations after gate closure is permitted - Proposals 3 and 5
- Forms of offer variations after gate closure – Proposals 2 and 4
- Compliance and enforcement of the gate closure rule – Proposal 1 and 6

**Proposal 3** Allow offer changes within gate closure to reflect revised capability of a unit “following a forced outage” instead of “during a forced outage”.

**Analysis**: Using the term “during” is more appropriate. Using “following” implies there is no end to the time a generator change offer within gate closure. EMC does not concur with Proposal 3 and recommended that the Panel does not support this Proposal.
Proposal 5: Be explicit that offer changes made within gate closure but falling outside defined exceptions are rule breaches.

Analysis: EMC agrees with this proposal to make it clear that offer changes should not be made after gate closure except under some specific circumstances and to ensure compliance. A new rule (Section 10.4.1) would be drafted to effect this change.

Proposal 2: Prohibit changing the prices of quantities already offered, except for additional quantities offered.

Analysis: In providing for exceptions, the only concerns should be system security and unit commitment. Prices should not be a consideration. Hence, EMC supports this proposal.

Proposal 4: Remove (i) reduced prices and (ii) positive contribution to the resolution of energy surplus as permissible exceptions to gate closure.

Analysis: EMC concurs with (i) for consistency with Proposal 2. However, (ii) cannot be supported because an energy surplus situation can and does occur. In some occasions, generators can react to alleviate a surplus situation.

Proposal 1: Remove the phrases “no tolerance” and “complete tolerance” when referring to offer changes.

Analysis: Terms are not needed following Proposal 5. Potential room for confusion because all offer changes made up to 5 min before a dispatch period is accepted by the MCE for producing dispatch schedules. EMC supports this proposal.

Proposal 6: Not deny MSCP of its normal investigative powers when dealing with cases relating to gate closure.

Analysis: Gaming within gate closure could potentially undermine market integrity and has financial implications for all MP’s. Also, since violation of gate closure may constitute a rule breach, there is no reason why MSCP’s powers under Chapter 3 should not apply. Hence, EMC supports this proposal.

Additional Recommendation

EMC had recommended that Sections 9.3.4 and 9.3.5 of Chapter 6 be amended so that the gate closure rules apply to situations when:

a. energy/reserve/regulation shortfall advisory notices (Section 9.3.4) are issued by EMC; or
b. energy surplus advisory notices (Section 9.3.5) are issued by EMC

The Panel supported EMC’s recommendation and to make the necessary recommendation to the EMC Board for adoption.
5.0 Paper No.: EMC/RCP/10/2003/227 – Short Term Schedule

This is a rule change proposal by EMC to implement a new Short-Term Schedule (STS). The proposed STS incorporate the most recent dispatch-related information and would enable the market participants to make more informed decisions.

This rule change is a follow-up to the PTRCP Meeting held on November 2002. At that meeting, the PTRCP had approved the extension of ‘gate closure’ period from 2 to 4 hours as an interim measure to solve the 2-hour ‘blind spot’ in the pre-dispatch schedule (PDS). The PTRCP noted that while the STS were a long-term solution, it required substantial system modifications which could not be completed prior to market-start. Notwithstanding this, it was noted by the PTRCP that the STS would be developed and implemented after market-start.

The proposed STS incorporate the most recent dispatch-related information. These include, among all, the very-short-term-load-forecast (VSTLF) supplied by the PSO half-hourly for 7 hours, the latest information relating to the grid and all offer variations made the MPs.

The proposed STS is also run and published half-hourly. Hence, the STS will enable the MPs to make more informed and efficient decisions. It also allows the Gencos and the PSO to better manage the generators and the power system respectively.

The Panel was informed that the STS took an estimated 226 man-days (both external and internal) to develop and implement. EMC had also conducted the STS production trial among the MPs and the PSO. Also, with the implementation of STS, there is a need to review the gate closure period to see if it can be shortened. EMC is recommending that such a review be conducted 6 months after the STS have been implemented. This will give MPs time to familiarize themselves with the STS, before EMC proposes any further change to the gate closure period.

The Panel was of the view that “six months after the STS have been implemented” was too long. The Panel suggested that the review of the gate closure period take place within six months instead of six months after the STS has been implemented.

The Panel supported EMC’s recommendations and to make the necessary recommendation to the EMC Board for adoption.
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6.0 Paper No.: EMC/RCP/11/2004/01 – EMC Budget for FY 2005

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

Mr. Tan Zing Yuen, Chief Financial Officer of EMC presented the Proposed Budget and Fees for FY2005 to the Panel.

The Panel was informed that under the Market Rules and EMC’s Market Licence, EMC is obliged to consult the Rules Change Panel on its Proposed Budget and Fees for the financial year 1 April 2004 to 31 March 2005, prior to submitting it to the Regulator for approval. The Panel was requested to consider and provide its views on the Budget so that EMC may take these into account in seeking formal approval from EMA.

EMC is also required to publish the proposed Budget and Fees to invited interested parties to make submissions to the RCP on the Budget. The Panel was also informed that EMC had published the Proposed Budget and Fees for FY2005 on its website and has not received any comments or submissions from interested persons.

The Budget is aligned to and supports the first year of EMC’s strategic business plan and IT Roadmap for the next five financial years 2004/2005 to 2008/2009.

The strategic business plan outlines EMC’s vision to be a leader of world-class energy markets. To achieve this vision, EMC has the following medium term strategic goals:

1. to establish a strong corporate culture in support of our Mission
2. to institute competitive benchmarks to establish world’s best practice
3. to be in the top five most cost effective Wholesale Electricity Markets in the world
4. to become the service provider of choice in all liberalized energy markets in Singapore
5. to be considered by stakeholders and interested parties to be a top 10 company in Singapore.

EMC’s IT Roadmap sets out the following direction of our IT systems:

- creation of a database for historic information
- improving the robustness of the operational database
- altering the way market participants receive information so that access to operational information is unaffected by access to non-critical information
- enhancing the functionality of the market clearing engine so that results can be more easily analysed and scenarios re-run or simulated
- adopting an infrastructure upgrade strategy that ensures EMC’s critical applications and systems remain up to date and supported by vendors
Mr. Tan informed the Panel that any costs incurred that do not relate to the operation of the NEMS will not be borne by the electricity market and therefore are not included in this Proposed Budget and Fees.

**Key Initiatives and Budget**

The key initiatives included in this Budget are:

- improving data storage and recovery
- enhancing market system functionality
- enhancing market participant interaction
- capability development
- developing and enhancing relationships with stakeholders

**Main Assumptions**

- The market operator licence granted in January 2003 will be for a period of ten years
- There is no change in the accounting policies
- The rate of return is as per the existing Shareholders’ Agreement. The administrative margin will remain at the present regulated rates of 7% on the net book value of non-current assets and 15% of the annual manpower costs
- All expenses and costs incurred in the course of operating and administering the NEMS are recoverable from the market
- Fixed assets are depreciated over three years on a straight line basis and depreciation commences in the month the asset is put to use
- The intangible asset comprising the capitalized Market Operator Implementation Project costs are amortised over ten years on a straight line basis

The Panel was informed that the budget was prepared based on the current rate of return and cost recovery methodology. Management would like to highlight to the RCP that the Budget is subject to revision if the Minister approves the change in the rate of return regime and cost recovery methodology.

**EMC’s Budget for period ending 31 March 2005 is as follows**

<table>
<thead>
<tr>
<th></th>
<th>Actual 6 months April-Sept 03</th>
<th>Budget 12 months FY2003/2004</th>
<th>Budget 12 months FY2004/2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Expenses</td>
<td>$11.98M</td>
<td>$27.54M</td>
<td>$27.12M</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>$1.31M</td>
<td>$2.72M</td>
<td>$2.44M</td>
</tr>
<tr>
<td>Fees per MwH energy traded (excl GST)</td>
<td>$0.41</td>
<td>$0.47</td>
<td>$0.46</td>
</tr>
<tr>
<td>Fees per MWh energy traded (incl GST)</td>
<td>$0.43</td>
<td>$0.49</td>
<td>$0.48</td>
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</table>
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The figures include the costs required by EMC to provide all but one of its services i.e.

- Systems
- Pricing and Information
- Settlement
- Ancillary Services
- Market assessment
- Rules Changes
- Panel Administration support

The costs of Registrations and Derogations are the only items excluded from the above as these ad-hoc costs are recovered from applicants at the time of their application.

The Key Areas of Expenditure within EMC’s budget include the following:

\textit{Manpower Costs} ($8.2m) – Manpower costs reflect the full cost of all EMC staff and Directors’ fees and expenses

\textit{Amortisation and Depreciation} ($7.1m) – Depreciation primarily covers computer software and hardware capital expenditure being depreciated over three years. Amortisation covers capitalized development costs associated with the establishment of the new market which are amortised over ten years.

\textit{System Support Costs} ($4.3m) – The systems cost supports the IT strategy as defined in the IT Roadmap for the next five years. These costs include system support, security, audits, maintenance and software and enhancement of the present system.

\textit{Market Licence Fee} ($2.2m) – EMC’s annual market licence fee is set by the EMA.

Other Key Operating Costs include:

\textit{Property Rental} ($1.1m) – The current lease expires on 31 December 2004. Management has negotiated with the landlord for a reduction in the rental. Savings achieved will be passed back to the market participants under the existing approved fee methodology.

\textit{Panel Fees} ($0.7m) – These are the remuneration costs for panel members plus expenses and training to enable them to discharge their obligations under the new market as approved by the EMA.

\textit{Legal Fees} ($0.2m) – EMC expenditure on legal fees are expected to relate mainly to advice relating to Rule Changes.

\textit{Insurance} ($0.6m) – The premiums are expected to increase by 30% due to the difficult market conditions in view of the major catastrophes and significant corporate failures. Market capacity has been severely tightened.
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**Metering Fees** ($0.2m) – This relates only to meter reading fees to SP Services

**Comparison with projected actual costs for FY2003/2004 and Budget for FY2004/2005**

<table>
<thead>
<tr>
<th></th>
<th>Budget 12 months April 03 – Mar 04 $ m</th>
<th>Projected 12 months April 03 – Mar 04 $ m</th>
<th>Budget 12 months April 04 to Mar 05 $ m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manpower Expenses</td>
<td>7.94</td>
<td>7.70</td>
<td>8.23</td>
</tr>
<tr>
<td>Depreciation and Amortisation</td>
<td>7.24</td>
<td>6.70</td>
<td>7.08</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>12.36</td>
<td>11.00</td>
<td>11.81</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>27.54</td>
<td>25.40</td>
<td>27.12</td>
</tr>
<tr>
<td>Margin</td>
<td>2.72</td>
<td>2.60</td>
<td>2.44</td>
</tr>
<tr>
<td>Total Fees</td>
<td>30.26</td>
<td>28.00</td>
<td>29.56</td>
</tr>
<tr>
<td>Fees per MWh</td>
<td>$0.47</td>
<td>$0.44</td>
<td>$0.46</td>
</tr>
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</table>

The budgeted cost including margin for the FY2004/2005 is $29.56m compared to the projected cost for FY2003/2004 of $28.0m and the budgeted cost of $30.26m for FY2003/2004.

The fee per MWh for the new FY2004/2005 is expected to be $0.46 per MWh of energy traded compared to the projected $0.44 for FY2003/2004.

The key reasons for the increase between the projected actual cost for FY2003/2004 and the Budget for FY2004/2005 are:

- Manpower Costs ($0.5m) due to increase budget for training and development and salary costs arising from increase in staff numbers and annual increment
- Depreciation charges ($0.4m) are expected to be higher as the data storage and recovery project and other enhancements to the systems as agreed and approved by the market
- NEM System costs ($0.6m) are expected to be increased as certain system activities are critical to the security and the maintenance of a robust and dependable system
- Insurance costs ($0.3m) are expected to be increased due to tightened market conditions
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EMC’s Indicative Fees

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<tbody>
<tr>
<td>Common Services Per MWh of energy traded</td>
<td>0.55</td>
<td>0.46</td>
<td>0.48</td>
</tr>
<tr>
<td>Registration</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Derogation</td>
<td>5,500</td>
<td>5,500</td>
<td>5,500</td>
</tr>
</tbody>
</table>

Over-recovery of Fees

Under the existing fee methodology, any over-recovery of fees will be refunded to the market participants in the next financial year.

Comparison of Fee Levels with Other markets

Management made a specific comparison of its fees with those applying in the New Zealand Electricity Market, given the evident similarities between the two markets. It was found that:

- NZ market appears to cost less than Singapore
- NZ market is either comparable or higher on a per MWh basis
- Total costs are not directly comparable
- Differences in services provided by EMC e.g. the MAU
- Singapore market is still new and therefore capital expenditure is not fully amortised
- There is a market licence fee in Singapore of S$2.2m

The Panel was informed that EMC will endeavour to provide comparison of its costs of operation again other market operators.

The Panel’s comments

Manpower Costs

The PSO’s budget shows that there will be a reduction in salary and training expenditure “in line with the Government’s initiatives under the current economic conditions”. It was also noted that salary has been frozen for all companies in the electricity supply industry. What are EMC’s assumptions with respect to salary costs?

The RCP commented that EMC’s assumption should be in line with PSO’s and the industry in general.
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\textbf{Management's Response}

EMC in developing its manpower budget took into account the current and projected economic conditions. The budget assumes an increment of 3%. Any increment to be awarded will be subject to review and approval by the Remuneration and Appointment Committee of the EMC Board. Historically, the R&A Committee has taken into account the prevailing economic conditions and the NWC recommendations when considering increments.

The Company’s emphasis is on the variable components of the staff remuneration which is performance-based. This is in line with the company’s policy of rewarding good performance. It also ensures that the company’s wages are flexible and can be adjusted to be in line with the economic conditions.

In addition, the company also takes into account the market survey conducted by our consultant Towers Perrin. Towers Perrin has indicated that they will include statistics from the electricity industry in the new fiscal year’s survey.

EMC’s budget assumes that in the new fiscal year, it will have its full complement of staff. There are a few more positions that have not been filled. These will be filled only when the needs are justified.

\textbf{Rate of Return}

The Panel noted that the Shareholders will be putting forward to the Minister proposals for a change in the rate of return regime and cost recovery methodology and requested to know if this will result in a higher cost to the market.

\textbf{Management's Response}

The Panel was briefed on the reason the existing formula for calculating the regulated margin is being reviewed. Management explained that under the current regime, EMC’s profit for the first 3 years will hover around $2 million but will very quickly fall to about $1.5 million when the fixed assets are fully depreciated.

\textbf{Offer of Services}

The Panel felt that the fees charged for certain services (for example information services and direct market participants) appear low. As one of the assumptions made in the budget was that all costs and expenses are recoverable, the Panel queried whether there are any cross subsidies in the provision of these services.

\textbf{Management's response}

Management informed the Panel that EMC is required to facilitate a service to direct market consumers and EMC’s principle is to recover the costs for the provision of such services.

Approved at the 12\textsuperscript{th} RCP Meeting

held on 15 March 2004
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Strategic Context

The Panel inquired what the Company meant by

- being “the service provider of choice in all liberalized energy markets in Singapore”; and

- “to be considered by stakeholders and interested parties to be a top 10 company in Singapore.

The Panel requested to know how we measure being a “Top 10 company in Singapore”.

Management's Response

Management advised that by being a “service provider of choice”, EMC hopes to be recognised as a world class market operator that institutions would always consider when appointing market operators in the energy market. To achieve that recognition, EMC would have to demonstrate that it is a professionally run organization, that is cost-effective and efficient.

As to the measurement for the “top 10” company in Singapore, EMC would compare itself against other top companies in Singapore in terms like for example, human resource functions, cost-effectiveness, efficiency, transparency and customer service in the provision of services. EMC will not be able to compare in quantitative terms like revenue or profitability due to our profit model.

Growth Projection

The Panel wanted to know EMC’s growth projection for load. The energy traded used in computing the fee per MWh in the budget is 5.36m MWh, the same as last year.

Management’s response

Management informed the Panel that the load figure used in the EMC budget assumed is obtained from SP Power Assets. The current year’s figure is not yet available. In addition, by using the same level of energy traded a more meaningful comparison between the two years’ fee per MWh can be made.

EMC uses the actual MWh for the fee calculations. The fee per MWH will be adjusted when the actual figures are available.

Benchmarking against other markets

The Panel felt that it may be useful for benchmarking to develop further the comparison with NZEM because the size of their market is quite similar to Singapore’s. Although NZEM’s structure does not match Singapore’s and there are some particular differences such as the fee EMC pays EMA, these differences can be adjusted or allowed for. Also, it is felt that it would be more useful to compare the elements of the two operations, than trying to make an overall comparison.
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The Panel requested Management to benchmark itself against other markets besides the NZEM. The Panel recognised the difficulties in making comparisons because of differences in services provided; the size of the markets and costs to be borne.

However, the Company could make the necessary adjustments to account for these differences in making the fee comparison.

Management’s response

EMC noted the Panel’s request and advised the Panel that for the next budget, it will continue to provide a better comparison against the NZEM and to make a comparative study of other markets.

RCP Report

EMC will draft the RCP Report for the Panel’s review and this report will be circulated to the Panel members for their agreement and submission to the EMC Board. The written report must be submitted to the EMC Board by 16 January 2004.

Projected actual cost for FY 2003/04

The Panel commended EMC for its efforts in lowering the actual costs per MWH compared to the approved budget for the current financial year. In addition, the RCP complimented EMC for budgeting for a lower operating expenditure and fees for the new fiscal year 2004/2005 compared to the current fiscal year.

Management assured the Panel that Management will remain vigilant in its control of expenditure and will strive to be cost-effective.

Recommendation

The Rules Change Panel supports EMC’s Budget for FY 2004/05 and to make the necessary recommendation to the EMC Board for consideration.

7.0 Paper No.: EMC/RCP/11/2004/02 – PSO BUDGET

The Panel noted the contents of the PSO Proposed Expenditure and Fees for the Fiscal Year FY04/05 commencing 1 April 2004.

The Panel noted that the maintenance cost of the Energy Management System, which is used for monitoring and control of the generation and transmission system, is expected to increase as a result of its expiry at the end of July 2004.

On the contents of the budget document, the Panel felt that more details would help the Panel to give more constructive views. At present, the Panel does not have sufficient information to give meaningful comments.

The Panel commended the PSO for bringing the overall budgeted operating expenses down from $0.263 per MWh in the previous budget.
to $0.245 per MWh.
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The Panel noted that the budget document gave no indication of any over/under recovery of fees. Whereas EMC’s fee methodology requires it to return any over-collected amounts back to the wholesale market, the RCP is unsure how over-recovery of PSO fees is being treated. The Panel felt that the treatment should be consistent with EMC’s fees. The Panel requested that an item on over/under-recovery of PSO fees to be added to the next Budget presentation.

The Panel also requested for a representative of the PSO to present the PSO budget at the next Budget review. This is so that members of the Panel can directly clarify issues in the budget document and ask pertinent questions that are not presented in the document.

Mr. Paul Poh informed the Panel that it is required by the Market Rules to submit a report of its review of the PSO budget to both the PSO and the EMA for consideration. This report is to be submitted 60 days before the start of the new fiscal year.

EMC will be preparing this report on behalf of the Panel. The draft report will be circulated to the Panel for review and approval before finalization and submission to the PSO and EMA.

[Post Meeting Note: The Rules Change Panel has submitted its Report to the PSO and the Authority on 12th January 2004]

8.0 Date of Next Panel Meeting

The next Panel meeting is scheduled to be held on 9th March 2004 at 10.00am at the EMC Board Room.

There being no other matters, the meeting ended at 12.15pm with a vote of thanks to the Chair.

ALLAN DAWSON
Chairman

Minutes taken by:
Eunice Koh
Market Panel Administrator