MINUTES OF THE RULES CHANGE PANEL
77th MEETING
HELD ON TUESDAY, 06 JANUARY 2015 AT 10.00AM
AT ENERGY MARKET CO. PTE LTD
238A THOMSON ROAD #11-01
NOVENA SQUARE, SINGAPORE 307684

Present: Paul Poh (Chairman) Lawrence Lee
Soh Yap Choon Lim Han Kwang
Daniel Lee Phillip Tan
Dr. Toh Mun Heng Sean Chan
Dallon Kay Toh Seong Wah
Frances Chang Grace Chiam
Priscilla Chua Marcus Tan

Absent with apologies: Luke Peacocke

In Attendance: Tan Liang Ching Lucia Loh
(EMC) Serena Ho Wang Jing

1.0 Notice of Meeting

The Chairman called the meeting to order at 10.00am. The Notice and Agenda of the meeting were taken as read.

2.0 Confirmation of Minutes of the 76th RCP Meeting

The Minutes of the 76th RCP meeting held on 4 November 2014 were tabled.

As there are no amendments to the Minutes, the RCP approved the Minutes.

2.1 Matters Arising

The Panel noted that all matters arising from the 76th RCP Meeting were completed.
3.0 Monitoring List

Under Item 1 – Number of Market Clearing Engine (MCE) Re-runs

Mr. Tan Liang Ching informed the RCP that from October to November 2014, there were 6 cases of price re-runs.

He highlighted that on 5 October, the MCE reported energy deficit and line binding with price separation. Further investigation revealed the NWStat file reflected incorrectly that a substation was partially disconnected. Type 2 reruns were conducted thus eliminated the price separations and line binding. No other price abnormalities were observed.

On 13 November, there was a NEMS planned maintenance occurring for 4 different periods where the MCE picked up the previous (rather than the latest) NWStat/VSTLF files and reruns were conducted using the correct files. In the final rerun the prices from the original dispatch run were finalized.

Under Item 3 – HH Index

Mr. Dallon Kay requested EMC to indicate that the HHI Index computed relates to registered capacity for Energy.

(The Panel invited Ms. Tan Phaik Kim, CFO and Ms. Chan May Ling, Finance Manager, of EMC to the meeting)

4.0 EMC’s Proposed Budget for FY2014/15 (15 months’ Period)
(Paper No. EMC/RCP/77/2015/01)

Mr. Paul Poh, Chairman of the RCP and Mr. Toh Seong Wah informed the Panel that both of them declared conflict of interests in the discussion on EMC’s Proposed Budget and thus would not take part directly in the discussion except to answer any questions directed to them.

The Panel was informed that under the Market Rules and EMC’s Market Licence, EMC was obliged to consult the Rules Change Panel on its Proposed Budget prior to submitting to the EMC Board for consideration and subsequently to the EMA for approval.

Ms. Tan Phaik Kim, EMC’s Chief Financial Officer (“CFO”) presented the Budget for FY2014/2015 (15 months period).

She informed that EMC was submitting the Budget for FY2014/15 with an additional 3 months’ budget to show the 15 month’s period from 1 April 2014 to 30 June 2015. This is because of EMC’s alignment of its financial year with SGX whereby the financial year will end on 30 June 2015.
The Panel was informed that EMC has also changed its external auditors and will now be using PriceWaterhouseCoopers LLP ("PwC"), the same auditors as SGX.

4.1 **Key Assumptions for the Budget**

1. Based on the Price Cap Revenue Regime for FY13/14 to FY17/18, adjusted for the 2% reduction effective 1 November 2014, as part of the agreement between EMA and SGX.
2. Budgeted expenses supported by specific functions, initiatives and projects. Industry consultations used as input to setting company priorities.
3. 87% of its Opex (excluding depreciation and license fees) is made up of 3 key items:
   i. Payroll & related – 55%
   ii. IT System costs – 20%
   iii. Lease rental costs – 12%
4. Payroll is projected based on Salary increment rate of 5% p.a. Includes additional resources for Demand Respond project.
5. IT system costs are driven by maintenance contracts. Higher renewal cost for NEMS System Maintenance (+ $246K) offset by lower Managed Security Services (-$160K).
6. Lease rental for the next 2 years is driven by contracted tenancy agreement for the Novena Square office. Rental is contracted to increase by a further 7.3%.

4.2 Ms. Tan shared the Actual Revenue Regime Admin Fees for the periods FY2008/09 to FY2012/13 compared with the admin fees based on EMA’s volume projections for periods FY2013/14 to FY2017.18 (Control Sum) which showed a drastic drop in EMC’s revenue base. EMC’s revenue will have a yearly adjustment for
   - Exogenous items
   - Depreciation

4.3 **Revenue**

Ms. Tan informed that the current regime adopts a price cap for each of the next 4 years. From 1 November 2014 onwards the price cap will be lowered by 2%.

<table>
<thead>
<tr>
<th>Regulatory Regime from 1 Apr to 30 Mar</th>
<th>FY14/15</th>
<th>FY15/16</th>
<th>FY16/17</th>
<th>FY17/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Cap Cents/MWh</td>
<td>27.57</td>
<td>26.69</td>
<td>25.83</td>
<td>25.01</td>
</tr>
<tr>
<td>Price Cap Cents/MWh (Eff 1 Nov 2014)</td>
<td>27.00</td>
<td>26.15</td>
<td>25.30</td>
<td>24.50</td>
</tr>
</tbody>
</table>
After this adjustment, EMC’s revenues will decrease further.

## 4.4 Financial Budget – Operating Expenses (15 months)

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget FY 14/15 $’000</th>
<th>Actual FY 13/14 $’000</th>
<th>Variance $’000</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and employment benefits</td>
<td>10,988</td>
<td>10,339</td>
<td>650</td>
<td>6.3%</td>
</tr>
<tr>
<td>Depreciation of plant and equipment</td>
<td>4,953</td>
<td>4,093</td>
<td>860</td>
<td>21.0%</td>
</tr>
<tr>
<td>Amortisation of intangible assets</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>Market Operator licence fee</td>
<td>3,265</td>
<td>3,265</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>IT service costs</td>
<td>4,070</td>
<td>3,987</td>
<td>83</td>
<td>2.1%</td>
</tr>
<tr>
<td>Office Maintenance/ Rental &amp; Utilities</td>
<td>2,496</td>
<td>2,261</td>
<td>235</td>
<td>10.4%</td>
</tr>
<tr>
<td>Legal and professional fees</td>
<td>361</td>
<td>743</td>
<td>(382)</td>
<td>(51.4%)</td>
</tr>
<tr>
<td>Directors’ fees</td>
<td>331</td>
<td>331</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>Directors’ expenses</td>
<td>12</td>
<td>45</td>
<td>(32)</td>
<td>(73.0%)</td>
</tr>
<tr>
<td>Audit fees</td>
<td>371</td>
<td>440</td>
<td>(69)</td>
<td>(15.7%)</td>
</tr>
<tr>
<td>Communications &amp; PR</td>
<td>223</td>
<td>197</td>
<td>26</td>
<td>13.3%</td>
</tr>
<tr>
<td>Insurance expenses</td>
<td>235</td>
<td>226</td>
<td>10</td>
<td>4.2%</td>
</tr>
<tr>
<td>Panel fees and expenses</td>
<td>341</td>
<td>205</td>
<td>136</td>
<td>66.3%</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>573</td>
<td>592</td>
<td>(19)</td>
<td>(3.1%)</td>
</tr>
<tr>
<td>Total NEMS expenses</td>
<td>28,221</td>
<td>26,719</td>
<td>1,499</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

Mr. Phillip Tan asked what the basis for the increase in Panel expenses is. The CFO said that it was an estimate of activities for the MSCP. The actual incurrence might be lower. She also said that panel fees are not exogenous and last year EMA gave qualification on exogenous items and EMC was informed that panel fees should not be exogenous. Mr. Paul Poh indicated that for MSCP the budget is based on a certain level of major investigations and there are 2 types of costs i.e. panel meetings and MSCP determinations.

Mr. Daniel Lee said that if panel fees are not exogenous, then this is a concern. If EMC is to reduce the panel fees this could mean that there could be less resources extended to the panel to monitor the quality of governance in the market. Mr. Lee was also concerned that EMC might have the incentive to reduce investigations to reduce cost and this would be detrimental to the market. The CFO said that EMC could ask EMA to reconsider treating Panel fees as exogenous.
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Mr. Lawrence Lee asked what will happen after the 2% price cap reduction period and what will be the framework that EMC will subsequently be based on. The CFO said that the 5-year regime will continue until March 2018 after which EMA and EMC will negotiate on the next 5 years’ regime.

Mr. Kay asked EMC to explain how the PIC was factored into the budget. The CFO explained that EMC will claim PIC allowances against taxable profits. This is preferable to claiming cash allowances for PIC because EMC has taxable profits.

Mr. Daniel Lee had difficulties with the EMC Admin Fees calculation from FY11/12 onwards. EMC will circulate to the Panel on the calculations.

In response to Mr. Kay’s query on the meters maintenance fees, Mr. Toh informed that it related to settlement ready meter data services paid to SP Services.

Mr. Daniel Lee asked what would happen to the 3 headcounts when the Demand Response (“DR”) project is completed. Mr. Toh clarified that these 3 headcounts are operational headcounts; they will be required to provide operations support to DR.

Development of Non-NEMS business. Mr. Kay enquired if there is a budget for business development. The CFO said that these are not shown as part of NEMS budget.

Increase NEMS non-administrative fee revenue

Mr. Kay enquired about what would constitute additional chargeable services. Mr. Toh Seong Wah said that EMC would continue to provide current services within the framework of the regime. For new services that are not currently provided by EMC, the cost of new service will have to be recovered from the market.

Mr. Toh added that for every rule change that is passed, there are 2 cost components – the capital component and the operating component. While the Rules Change Panel budget takes care of the capital component, it does not take care of the ongoing operational cost. Thus far, EMC had been absorbing majority of the operational cost arising from new market initiatives, there will come a time when EMC is unable to do so. Going forward EMC has to find a way to recover such additional operating costs especially, when it represents a significant increase in operating expenditure. For such cost recovery, EMC will write to EMA for their approval before EMC starts the project.
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Regulatory Regime versus price cap.

Mr. Lim Han Kwang said that with the change to a 15 months' budget, will EMA still continue to use the 12 months budget for regulatory purposes. The CFO said that EMC is in discussion with EMA. Initial feedback received from EMA was that they are willing to align the reporting period but the price cap change may remain as 1st April. For EMC’s reporting to EMA for the adjustments on depreciation returns EMA has allowed EMC to report as at 30 June 2015.

Ancillary Services

Mr. Daniel Lee asked if it is intended to align the ancillary service contracts with the June period. Mr. Paul Poh confirmed there will be no change to existing ancillary services contracts and they will continue to run from 1 April to 31 March.

Comments received from the Panel:

1. Whether MSCP costs to continue to be treated as exogenous. If not, EMC would try to reduce investigation costs by reducing numbers of investigation.

2. Budget excluded non-NEMS items. EMC confirmed it is not supported or funded by the market.

EMC stated that it would circulate the RCP Report on EMC’s Budget for FY2014/15 (15 months’ period) to the Panel for confirmation before issuing to the EMC Board and the EMA.

Mr. Daniel Lee gave comments to EMC’s Proposed Budget paper for EMC to follow-up:

<table>
<thead>
<tr>
<th>Reference</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Page</td>
<td>Should be “Chief Executive Officer” and not “Chief Operating Officer” for position of Dave Carlson.</td>
</tr>
<tr>
<td>Page 6, Section 1</td>
<td>In the 4th paragraph, it should be “Rules Change Panel” and not “Rule Change Panel”.</td>
</tr>
<tr>
<td>Page 8, Section 4</td>
<td>“Authorised Business” should be enclosed in brackets. Same for “License”.</td>
</tr>
<tr>
<td>Page 11, Section 6.2</td>
<td>For “Compliance to Market Rules and related legislations”, it should be “Compliance with” and not “Compliance to”.</td>
</tr>
<tr>
<td>Page 12, Section 6.2</td>
<td>For “it is also important that the MAU is able to support, advice and educate the MSCP”, “advice” should be “advise”.</td>
</tr>
<tr>
<td>Page 13, Section 8.1</td>
<td>“This consultation process has been used to guide EMC’s business plan initiatives for FY2014/15” is missing a full stop at the end.</td>
</tr>
<tr>
<td>Pages 16 and 17, Table</td>
<td>The “#” sign should be “6” instead.</td>
</tr>
</tbody>
</table>
Would like to check how the Nominal EMC Admin Fees are calculated? For FY2011/12(actual) and before, one can get the Nominal EMC Admin Fees by multiplying the NEMS Volumes by S$ Cents/MWh and further multiplying by 2 but not so for FY2012/13 (actual) and later.

| Page 17, Section 8.1, Note 4 | "EMC actual, forecast and budget Admin Fees" should be amended to "EMC actual Admin Fees" as Note 4 applies only to actual Admin Fees. |
| Page 17, Section 8.1, Note 6 | For "[EMC admin fee budgeted 27.57/27.00 cents / MWH] / [Actual YTD Sep 2014 USEP $143/MWH] = 0.19% ", the "27.00" appears to be extraneous. The "27.00" reflects the price cap number from 1 Nov 2014 but the table for which Note 6 applies to uses the price cap numbers that applied before 1 Nov 2014. |
| Page 18, Section 8.1, under Manpower costs | For "There is no change to the permanent staff headcount of 64 budgeted in FY2014/15, including 3 headcounts from EMA directed project recovered under exogenous.", what will happen to the 3 headcounts mentioned after completion of EMA directed project?

Noticed that the original FY2014/2015 budget paper -EMC/RCP/71/2014/01, EMC's Proposed Budget for FY2014/15 dated 20 December 2013, indicated a headcount of 61 (though numbers add up to 62). Therefore the statement about there being "no change to the permanent staff headcount of 64" does not appear to be accurate. |
| Page 19, Section 8.2.1, Table | For the Original Budget FY14/15 $'000, for Manpower and Other Operating Expenses, the numbers given are 8,814 and 13,691 respectively. However, in the paper EMC/RCP/71/2014/01, EMC’s Proposed Budget for FY2014/15 dated 20 December 2013, the numbers given on page 19 are 8,935 and 13,570 respectively. Why is this so? "(before interest and tax" is missing the closing bracket. |
| Page 20, Section 8.2.2 | For FY14/15 Budget (in S$'000), for Manpower and Other Operating Expenses, the numbers given are 8,814 and 13,691 respectively. However, in the paper EMC/RCP/71/2014/01, EMC’s Proposed Budget for FY2014/15 dated 20 December 2013, the numbers given on page 19 are 8,935 and 13,570 respectively. Why is this so?

"NEMS Profit before tax" should be amended to "NEMS Profit before interest and tax". The statement “Overall, the FY2014/15 Forecasted NEMS Profit before interest and tax is expected to be higher than FY2014/15 by $1,387K mainly due to the higher depreciation adjustments, lower manpower and other operational costs” should be checked, specifically the part “be higher than FY2014/15 by $1,387K”. Looks like should be "FY2013/14" instead of “FY2014/15” and it should be “lower” and not “higher”. The amount of
$1,387K looks to actually be for the budgeted NEMS Profit before interest and tax for FY14/15.

Page 24, Section 8.2.5
For “The manpower capitalisation budget is higher than FY13/14 due to more projects planned in FY14/15 and higher manpower costs.” The “the” after FY13/14 is extraneous.

Page 27, Section 8.2.9
For “Legal and Professional fees in FY2014/15 is expected to be lower than FY2013/14 by $382K mainly due to professional fees and legal fees for rule change related matters are usually not included in the budget.”, “are usually not included in the budget” should be changed to “usually not being included in the budget” for correctness of grammar.

Page 27, Section 8.2.10
What is it in the table that for “Directors’ travel for study trip”, it is indicated as “-” for “Actual FY13/14 15 Mths” although it is indicated in section 8.2.10 that “Director Expenses’ budget at $32K in FY14/15 is lower than the FY13/14 mainly due to the bi-annual international study visit incurred in FY13/14” which implies that expenses were incurred for a study trip in FY13/14.

Page 31, Section 8.2.14
It is written that “Panel fees and expenses are no longer exogenous.” If Panel fees and expenses are no longer exogenous, lower Panel fees and expenses would translate to higher profits for EMC. This could impact on the quality of market monitoring through attempts to lower Panel fees and expenses to increase profits.

Page 32, Section 8.2.15
For “Other operating expenses for FY14/15 budget are lower than FY13/14 mainly due to the lower meeting expenses, recruitment and phone and lease line claim from FY2013/14.” “from FY2013/14” should be “than FY2013/14”.

Page 35, Section 9.2
A colon is missing at the end of “The following sections provide a detailed explanation on MOIT capital initiatives for FY14/15”.

Page 35, Section 9.2.1, Table
Reference to “9.2.1” should be to “9.2.2”.
Reference to “9.2.2” should be to “9.2.3”.
Reference to “9.2.3” should be to “9.2.4”.

Page 35, Section 9.2.2
“old” is missing from behind “3 years”.

Page 36, Section 9.2.3
“old” is missing from behind “5 years”.

Page 37, Section 9.2.3, Note 1
A full stop is missing at the end of “External cost refers to the contract staff cost, vendors’ development cost, software licenses & hardware cost (if applicable for new projects)”.

Page 37, Section 9.2.3, Note 2
For “Internal cost refers to the capitalisation of internal manpower cost. Besides the projects listed in this section, the internal manpower will also be working on some the RCP Requests/EMA Directed Projects listed on section 7.3.”, it should be “some of the” and not “some the” and it should be “listed in Section 9.3” and not “listed on section 7.3”.

Page 40, Section 9.2.3.5
For “To enhance MCE based on the RCP work items and EMA directed projects listed on Section 8.3”, it should be “listed in Section 9.3” and not
EMC took note of these comments and will make the necessary changes to the Proposed Budget.

(The Panel thanked Ms. Tan and Ms. Chan for their attendance and they both left the meeting)

5.0 **Summary of Outstanding Rule Changes**

The RCP noted the summary of outstanding rule changes.

6.0 **Rules Change Work Plan Status Update**

The RCP noted the update on the Rules Change Work Plan.

Mr. Kay requested EMC to check with EMA when EMA could revert with their decision on the outstanding rule change proposal “Publication of Total Available Offer Capacity”.

CFO

EMC
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7.0 Handling of Fictional Busbars
(Paper No. EMC/RCP/77/2015/CP54)

Mr. Tan Liang Ching informed that on 17 September 2013, price separation occurred for Periods 7 to 48 because the generation unit of a GRF was connected to an islanded fictional bus, resulting in the MCE assigning an extremely high price to this MNN. Even though the GRF was not scheduled, this high price episode sent a wrong signal to the market and necessitated Type 5 price reruns for these periods.

Upon investigation, it was found that the generation unit was islanded as a consequence of the dispatch network simplification process, whereby the MCE processes PSO's network status files to simplify them into an electrically-equivalent connectivity model. In this case, PSO designated fictional buses as both the main and alternate default busbars for this generation unit, which were then subsequently removed as part of the EMC’s dispatch network simplification process (under Appendix 6D Section D.6.3 of the market rules).

EMC analysed the case and explored the following solutions:

- Option 1: Require at least one of either main or alternate default busbar to be a real one
- Option 2: Notionally designate fictional buses assigned as main or alternate default busbars as real buses in the standing data
- Option 3: Change the Dispatch Network Simplification Process in the MCE

EMC recommended that the RCP support Option 2.

Mr. Lawrence Lee asked for the estimated cost and lead time to implement the system changes required for Option 3. Mr. Tan replied that EMC did not look at the costs as EMC was recommending Option 2 - to notionally designate fictional busbars as real ones in pre-processing. Mr. Sean Chan suggested that EMC could document the Option 2 apparently being the least cost option or at no cost and hence it was not necessary to estimate costs of the other options. Nevertheless, for completeness, EMC will provide the Panel with the estimated cost and lead time for Option 3 at the next Panel meeting.

The Panel unanimously supported Option 2 and EMC will make changes to the Market Operations Market Manual – Standing Offers, Offer Variations and Standing Data (chapter 6 Market Rules)
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8.0 Meeting Schedules for 2015

The Panel noted the meeting schedules for 2015.

Mr. Phillip Tan indicated that the November 2015 meeting date coincides with Deepavali Day. The Chairman suggested changing the date.

Mr. Kay suggested that if the agenda for any future meeting should take longer than 2 hours, the particular meeting should start earlier than 10.00am. The Chairman took note of this.

There being no other matters, the meeting ended at 11.40am.

Paul Poh
Chairman

Minutes taken by:
Eunice Koh
Senior Executive - Corporate Secretariat