MINUTES OF THE RULES CHANGE PANEL
69th MEETING
HELD ON TUESDAY, 10 SEPTEMBER 2013 AT 9.40AM
AT ENERGY MARKET CO. PTE LTD
238A THOMSON ROAD #11-01
NOVENA SQUARE, SINGAPORE 307684

Present: Dave Carlson  Michael Wong
         Luke Peacocke  Sean Chan
         Dallon Kay     Phillip Tan
         Dr. Toh Mun Heng  Lawrence Lee
         Daniel Lee     Pak-Juan Koe

Absent with Loh Chin Seng  Toh Seong Wah
  apologies: Kng Meng Hwee  Chan Hung Kwan

In Attendance: Paul Poh  Tan Liang Ching
(EMC)          Lucia Loh  Serena Ho
                Wang Jing  Jo Ong

1.0 Notice of Meeting

The Chairman called the meeting to order at 9.40am. The Notice and Agenda of the meeting were taken as read.

2.0 Confirmation of Minutes of the 68th Rules Change Panel Meeting

The Minutes of the 68th Rules Change Panel meeting held on 9 July 2013 were tabled.

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

2.1 Matters Arising

Ms. Lucia Loh presented the following matters arising from the 68th RCP:

2.1.1 Mid-year review of work plan

EMC proposed that in future years, before the September RCP meeting, MPs and RCP members could submit urgent issues that they feel should be addressed. The RCP in its September meeting would decide if these issues should take priority over issues on the RCP work plan where work has not commenced.

EMC proposed for this new arrangement to take effect at the September 2014 RCP meeting.

The RCP agreed with EMC’s proposed arrangements.
2.1.2 Reshuffling of priorities within current work plan

EMC is currently addressing 2 additional issues which are not in this year's work plan:

1. Provision of Regulation by Batteries
2. Rule changes for Forward Sales Contract for proposed Futures Market

On issue 1) Provision of Regulation by Batteries, Mr. Paul Poh explained that the PSO have been conducting technical tests on batteries, and has agreed in principle that batteries can provide regulation. Mr. Poh added that the inclusion of batteries as regulation providers will improve the competitiveness of the regulation market. EMC is currently working with PSO on the technical requirements for batteries to participate, and plans to table the proposed rule changes to the RCP in January 2014.

On issue 2), Rule changes for Forward Sales Contract for proposed Futures Market, the Panel was informed that the EMA is planning to implement the forward sales contract to facilitate the proposed Futures Market.

Both of the two new issues entail market rule and system changes.

As such, EMC proposed the RCP allow the following 2 issues on the current workplan to be delayed:
- **Item 12**: Extension of Step-wise Approach to other CVPs; and
- **Item 10**: Eligibility of energy and reserve offers, OR **Item 4**: Multi-unit Facility Remodelling

Mr. Dallon Kay asked if the 2 additional issues could be accommodated without adjusting the priority on the current workplan. Mr. Poh explained that there are resource constraints as the changes entail not just market rule changes but also IT systems changes.

Based on the work plan status, the Chairman said that work was not started on Items 4, 8, 10, 11, and 12, and asked why EMC proposed Item 12, and Item 10 or 4 to be selected. Mr. Poh explained that a significant amount of work has been done for Items 8 and 11, although a concept paper has not yet been published for the respective issues.

Mr. Poh added that EMC proposed to delay Item 12 because the initial Stepwise Constraint Violation Penalties (CVPs) proposal, which will be tabled at this meeting for the RCP’s approval, will only be implemented sometime next year. He opined that it will be beneficial to see the results following the implementation of the initial stepwise CVP approach first, before implementing its applicability to other types of constraints.
Mr. Lawrence Lee asked why EMC chose to prioritise the issue on Provision of Regulation by Batteries and delay Items 12 and 10 on the current workplan. He enquired on EMC’s process to introduce new issues to the current workplan. While he understood that EMC will have to tackle an issue if it was EMA-driven, and thus block off other priorities, he questioned why an issue which was not directed (i.e. Provision of Regulation by Batteries) could override the initial prioritisation in the current workplan.

Mr. Poh replied that the additional issues were not in the rules change work plan when the Panel carried out its prioritization in January 2013. He explained that the issue on Provision of Regulation by Batteries had begun as a technical trail with PSO. Since PSO has determined that batteries can provide regulation and, implementing the proposal will be beneficial to the market, EMC brought the issue to the RCP.

The Panel agreed to delay Items 10 and 12.

The Panel also requested that EMC bring to the Panel a process to decide on whether to include an issue into the RCP’s workplan.

2.1.3 **Modelling of Minimum Stable Load**  
(Paper No. EMC/RCP/2013/68/CP48)

Ms. Lucia Loh informed that at the 68th RCP, the RCP requested EMC to examine different implementation options to lower the costs to implement the proposed Modelling of Minimum Stable Load (MSL).

Ms. Loh presented an alternative implementation route, which was to concurrently implement the MSL proposal with the EMA directive on the Automatic Penalty Scheme (APS). Under this alternative, the MSL proposal will incur only incremental costs of customising calculations at $203,000, with expected delivery in August 2015.

The Panel unanimously decided on Option B (Concurrent implementation with APS).

3.0 **Summary of Outstanding Rule Changes**

The Panel noted the summary of outstanding rules change proposals.

4.0 **Monitoring List**

The Panel noted the contents of the paper.
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5.0 Rules Change Workplan Status Update

The Panel noted the contents of the paper.

6.0 Review of Constraint Violation Penalties
(Paper No. EMC/RCP/2013/69/317)

Ms. Lucia Loh presented the rule modifications to give effect to the RCP’s decision at its 67th meeting to implement Stepwise Constraint Violation Penalties (CVP) for reserve and regulation deficits. She informed that the proposed rule changes were also unanimously supported by the TWG at its 21st meeting.

Mr. Michael Wong asked why the Violation Penalty Block Quantities in Appendix 6J was set at 2000MW for each stepwise block. Mr. Tan Liang Ching explained that the market clearing engine, in initializing its run, requires each CVP block quantity to take on a nominal value. However, this large number is not meant to be binding, and the actual block quantity will be further refined by the proposed new constraints in the linear program.

Ms. Loh then informed the Panel that the proposal will take 30 weeks to implement and require $78,263 in additional costs.

The Panel by majority vote supported the rule modifications to implement Stepwise CVP Option 6. The details of the votes are as follows:

Those who voted to support:
1. Mr. Daniel Lee (Representatives of Generation Licensee)
2. Mr. Koe Pak-Juan (Representatives of Generation Licensee)
3. Mr. Sean Chan (Representatives of Retail Electricity Licensee)
4. Mr. Michael Wong (Representatives of Retail Electricity Licensee)
5. Mr. Dallon Kay (Representative of Wholesale Electricity Trader)
6. Mr. Philip Tan (Person experienced in Financial Matters in Singapore)
7. Dr. Toh Mun Heng (Representative of Consumers of Electricity in Singapore)
8. Mr. Luke Peacocke (Representatives of Generation Licensee)

Those who abstained:
1. Mr. Lawrence Lee (Representative of the market support services licensee)
7.0 Proposed New Constraint for Handling Non-Physical Losses
(Paper No. EMC/RCP/2013/69/CP47)

Ms. Serena Ho presented the Proposed New Constraint for Handling Non-Physical Losses (NPL). She said that an incident had occurred on 14 February 2013, triggering a Market Clearing Engine (MCE) procedural change which reduced the number of iterations required in the current iterative process for handling NPL. This has mitigated the issue of accelerating the convergence of the iterative procedure, which the original proposal to implement the Loss Ceiling Method aimed to address. Nevertheless, the three-step modified loss ceiling method was assessed as part of the continual enhancements to the MCE.

Estimated Implementation Time and Costs

Ms. Ho shared that the total time required will be 27 calendar-weeks and the total additional cost required will be $49,700 (to be funded from the RCP Contingency budget).

The Panel was informed by the PSO in an email dated 6 September 2013 that the PSO supported the implementation of the proposal with a modification to reduce the costs. The PSO suggested doing away with the parallel MCE runs which would reduce the cost of implementation by $29,700 to $20,000 and save 4 man-weeks/8 calendar-weeks, because it would be unlikely for any periods with negative prices to be captured during an 8 calendar-week period.

Dr. Toh Mun Heng asked if the cost of $49,700 was a recurring annual cost. Mr. Tan Liang Ching replied that it was a one-off cost of implementation.

Dr. Toh commented that if the current iterative method for handling NPL was already very accurate and close to the global optimum, there was no need to go through so much work to try to bring it marginally closer to the global optimum. Mr. Carlson replied that the accuracies of the current NPL handling and the proposed new method were not known until EMC conducted all the simulations and applied the Mixed Integer Programming to compare these methods with the global optimum. In any case, this entire process has helped shed light on the accuracy of our current method.

Mr. Pak-Juan Koe asked why the cost of audit high was ($20,000). Mr. Phillip Tan replied that in comparison with most other auditing work, this cost was not considered high.
Mr. Peacocke commented that we should not be making changes to the MCE algorithm unless there are strong reasons to do so. He disagreed with the TWG’s comments to put this proposal on hold until a time when NPL becomes a more pressing issue. This is because the RCP’s responsibility is to make current decisions taking into account what they foresee would be the situation in the future. Specifically, if the RCP believed that NPL would become a more pressing issue in the future, then the decision to be made now should be to implement the proposal instead of putting it on hold. Conversely, if the RCP believed otherwise, then the decision should be to not go ahead with the implementation of the proposal now.

Mr. Daniel Lee suggested that this proposal can be revisited if any NPL issues resurface in the future. Mr. Dallon Kay asked if the frequency of negative priced periods (and hence the need for NPL processing) should be included in the RCP monitoring list. Mr. Michael Wong responded that there was no need to actively monitor this, as any new NPL problem that occurs in future can serve as a trigger for the proposal to be revisited.

After considering the benefits and costs of implementing the three-step modified loss ceiling method, the RCP agreed with the TWG that while the proposal was sound and had its merits, the low frequency of negative prices in real-time dispatch periods would mean that the benefits would be limited and not justify the costs of implementation. Therefore, the RCP unanimously decided not to support the implementation of the three-step modified loss ceiling method to handle non-physical losses.

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

David E. Carlson
Chairman

Minutes taken by:
Eunice Koh
Sr. Executive, Corporate Secretariat