MINUTES OF THE RULES CHANGE PANEL
82ND MEETING
HELD ON TUESDAY, 8 SEPTEMBER 2015 AT 10.05AM
AT ENERGY MARKET CO. PTE LTD
238A THOMSON ROAD #11-01
NOVENA SQUARE, SINGAPORE 307684

Present: Paul Poh (Chairman) Lawrence Lee
Soh Yap Choon Daniel Lee
Dallon Kay Luke Peacocke
Sean Chan Marcus Tan
Grace Chiam Frances Chang
Priscilla Chua Dr. Toh Mun Heng

Absent with apologies: Lim Han Kwang Phillip Tan

In Attendance: Wang Jing Lucia Loh
(EMC) Serena Ho Jo Ong
Yap Yun Ben

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 81st RCP Meeting
The Minutes of the 81st RCP meeting held on 14 July 2015 were tabled.
There being no amendment to the Minutes, the RCP approved the Minutes.

3.0 Monitoring List
The RCP noted the contents of the paper.

4.0 Summary of Outstanding Rule Changes
The RCP noted the summary of outstanding rule changes.

5.0 Rules Change Work Plan Status Update
The RCP noted the update on the Rules Change Work Plan.
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5.0 Mid-Year Review of Rules Change Work Plan 2015/16
(Paper No. EMC/RCP/2015/82/05)

Ms. Lucia Loh informed the Panel that, as part of a mid-year review of the rules change work plan, EMC invited stakeholders to raise any urgent issues that they wished to be addressed. At the close of submissions, EMC received 2 proposals from the PSO.

EMC recommended that the RCP consider the following factors to decide whether a new issue should take priority over an existing work plan issue where work has not commenced:

a) **Urgency of issue** - Whether the issue needs to be dealt with urgently, and whether there are any foreseeable adverse effects from postponement.

b) **Impact of issue on the wholesale market** - Assessment of the potential benefits and efficiency gains to the wholesale market from addressing the issue, or the potential detrimental effects from not addressing the issue.

5.1 Proposal A - Period-based minimum demand forecast by day types
(Proposed by: PSO)

The PSO proposed that the market clearing engine (MCE), in determining real-time and forecast schedules, use the minimum demand forecast if the demand forecast received from PSO is lower than the minimum value. The minimum demand forecast will be provided by PSO to EMC on an annual basis.

The PSO was concerned that if an erroneous demand forecast of 0MW was received by EMC and used by the MCE, generating units could be scheduled to shut down abruptly, and thus pose risks to system security and reliability.

Given that the demand forecast is central to scheduling outcomes, any change to the demand forecast will have implications on the operational integrity of the market. EMC thus assessed the impact of this issue to be high.

EMC assessed the urgency of this issue to be medium; there is no foreseeable urgency in tackling this issue given the infrequency and improbability of a zero demand forecast.

5.1.1 In reply to Mr. Sean Chan’s query on the impact of the incident which motivated PSO to submit this proposal, Chairman replied that the zero demand forecast affected dispatch periods covered by the forecast schedules. The real-time schedules were not affected.
5.1.2 To Mr. Dallon Kay’s question on the impact if a zero demand forecast was used in the real-time schedule, Chairman replied that generators’ energy schedule produced by the MCE will then be zero.

5.1.3 Mr. Kay also queried why the proposed change to the MCE could not be made immediately, and whether there is a short-term fix that could be easily done to handle this issue. He also noted that the maximum acceptable value in the MCE is currently 99,999MW, and suggested that a more realistic maximum value, such as the total registered generation capacity, be used instead.

Chairman replied that there is a need to further examine this proposal. If the actual demand is indeed lower than the minimum demand forecast, using the minimum demand forecast would result in the MCE scheduling more generation than is needed.

5.1.4 Chairman noted that the proposal is essentially to prevent a zero demand forecast from being used, and wondered whether the check against the minimum demand forecast could be done on PSO’s end instead. Mr. Soh replied that PSO carried out demand forecast via a load forecasting module in the PSO’s Energy Management System and sent to EMC 10 minutes prior the start of each dispatch period. PSO would work with EMC how the issue can be best dealt with when working on the details.

5.2 Proposal B - Regulation Reserve Effectiveness Factor
(Proposed by: PSO)

Ms. Loh informed the Panel that the PSO’s second proposal is to re-examine the need for a regulation effectiveness factor, given the potential introduction of battery facilities as regulation providers in a recent rule change.

EMC assessed the urgency and impact of this issue to be medium. While it will be useful to assess the performance of battery facilities vis-à-vis that of other regulation providers, the system and rule changes will only take effect in late April 2016. This implies that the earliest that an assessment can be carried out is in August 2016, when sufficient data on batteries’ performance (of at least 3 months) will be available.

5.3 EMC recommended that the Panel include these 2 issues in next year’s Rules Change Work Plan prioritisation exercise. The Panel agreed with EMC’s recommendation.
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6.0 Extending Planning Horizon of Annual Outage Plan
(Paper No. EMC/RCP/81/2015/RC331)

Ms. Lucia Loh presented the rules change proposal to extend the coverage of the Annual Outage Plan from 1 year to 3 years. She informed the Panel that this rule change proposal is to align with the EMA's decision for outage plans to look ahead three years, in its determination paper released in July 2014.

With the proposed rule changes, the annual outage planning exercise will produce:
- an approved annual outage plan (for 1\textsuperscript{st} year), as per current procedures, and
- a pro forma biennial outage plan (for 2\textsuperscript{nd} & 3\textsuperscript{rd} year) based on indicative outage plans of MPs.

6.1 Mr. Kay sought clarification on how the publication date of 15 October was determined. Ms. Loh replied that the pro forma biennial outage plan will be published at the same time as that for the approved annual outage plan. Based on the System Operation Manual, the PSO currently publishes the approved annual outage on 15 October each year.

6.2 Mr. Luke Peacocke asked whether the proposed rule changes required pro forma biennial outage plans to be submitted in good faith. Chairman replied that while the rules have been drafted to avoid imposing an onerous obligation on Gencos, EMC understands that such information could still be under the jurisdiction of the Securities and Futures Act, given the existence of the electricity futures market. Information that is provided by Gencos should thus not be provided with the intention to manipulate.

6.3 Mr. Kay suggested that the pro forma biennial outage plan be refreshed every 6 months, to ensure the availability of more updated data.

Mr. Daniel Lee commented that there was much uncertainty for outage plans for the further years, since Gencos would not have firmed up the outage schedules with their vendors and the timing of maintenance are also dependent on many factors.

6.3.1 Mr. Marcus Tan added that there are many changes even for the outage plan for the current year. It will be very onerous for Gencos to be required to update plans for the further years.
6.4 The following Panel members voted to support the proposed rule modifications to extend planning horizon of annual outage plan:

- Soh Yap Choon (Representative of the PSO)
- Lawrence Lee (Representative of the Market Support Services Licensee)
- Priscilla Chua (Representative of the Generation Licensee class of market participant)
- Grace Chiam (Representative of the Generation Licensee class of market participant)
- Sean Chan (Representative of the Retail Electricity Licensee class of market participant)
- Luke Peacocke (Representative of the Retail Electricity Licensee class of market participant)
- Daniel Lee (Representative of the Retail Electricity Licensee class of market participant)
- Dallon Kay (Representative of the wholesaler electricity market trader class of market participant)
- Dr. Toh Mun Heng (Representative for the interests of consumers of electricity in Singapore)
- Frances Chang (Representative for the interests of consumers of electricity in Singapore)

The following Panel member abstained from voting:

- Marcus Tan (Representative of the Generation Licensee class of market participant)

Hence, the Panel by majority vote supported the proposed rule modifications.

7.0 Rectification of Settlement Formula for Net Participant Settlement Credit (Paper No. EMC/RCP/2015/82/RC333)

Ms. Wang Jing presented the paper to amend the settlement formula that is used to calculate the Net Participant Settlement Credit (NPSC).

7.1 Currently, EMC is required to calculate a:

- Net Account Settlement Credit (NASC) for each settlement account; and
- Net Participant Settlement Credit (NPSC) for each MP

Based on existing rules, the NPSC is equal to NASC.

A Market Participant could have more than one settlement account if he has

- two or more groups of embedded generation facilities; or
- one group of embedded generation facilities and other facilities.
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Therefore, the formula for calculating NPSC is to be amended to be the aggregate of NASC over all of the settlement accounts associated with the MP.

\[ \text{NPSC}_h^k = \sum a(k) \text{ NASC}_h^{a(k)} \]

7.2 Ms. Wang said that to minimize the implementation cost, system changes will be made together with Demand Response Program. The estimated implementation cost will be $5,945, which is within EMC’s budget.

7.3 Mr. Kay noted that for MPs without embedded generators (EG), they have only 1 settlement account. He requested to allow such MPs to have multiple settlement accounts, for greater flexibility.

7.3.1 The Chairman advised that the reason for having only one settlement account per MP is so that each MP receives only 1 settlement statement from EMC per trading day, for all of the MP’s facilities. This consolidated statement will then indicate the net amount payable to or receivable from the MP.

For MPs with more than 1 EG, multiple settlement accounts are required to match each EG’s generation with the relevant associated load at that location for the purpose of effecting price neutralisation.

Chairman said that EMC will include Mr. Kay’s suggestion in next year’s Rules Change Work plan prioritisation exercise.

7.4 The following Panel members voted to support the proposed rule modifications to amend the settlement formula used to calculate the Net Participant Settlement Credit:

- Lawrence Lee (Representative of the Market Support Services Licensee)
- Marcus Tan (Representative of the Generation Licensee class of market participant)
- Priscilla Chua (Representative of the Generation Licensee class of market participant)
- Grace Chiam (Representative of the Generation Licensee class of market participant)
- Sean Chan (Representative of the Retail Electricity Licensee class of market participant)
- Luke Peacocke (Representative of the Retail Electricity Licensee class of market participant)
- Daniel Lee (Representative of the Retail Electricity Licensee class of market participant)
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- Dallon Kay (Representative of the wholesaler electricity market trader class of market participant)
- Dr. Toh Mun Heng (Representative for the interests of consumers of electricity in Singapore)
- Frances Chang (Representative for the interests of consumers of electricity in Singapore)

The following Panel member abstained from voting:

- Soh Yap Choon (Representative of the PSO)

Thus, the Panel, by majority vote, supported the proposed rule modifications.

8.0 Extension of Stepwise Constraint Violation Penalties
(Paper No. EMC/RCP/2015/82/CP57)

Ms. Lucia Loh presented the paper that examined the proposal to apply Stepwise CVPs to line violation and ramp rate violation.

8.1 Proposed Stepwise CVPs for Line Violation

She informed the Panel that after consulting with the Transmission Licensee and the PSO, simulations were conducted to examine the impact of allowing the MCE to incur mild line violation of up to 10% of a line’s continuous rating at a lower CVP cost, so as to alleviate energy deficits.

8.1.1 Mr. Kay sought clarification on whether a line’s emergency rating is currently used. Chairman explained that physically, in operating the power system in real-time, the PSO may overload a line up to its emergency rating. This proposal examines whether the MCE should incorporate this allowance in scheduling as well.

8.1.2 Mr. Kay asked whether operating lines at their emergency ratings would increase the wear-and-tear on lines and lead to higher system charges due to maintenance work. Mr. Soh shared that the physical equipment are designed for operation at their emergency ratings. However, Mr Soh further added that SPPG, as the asset owner, would be in a better position to advice on the issue.

8.1.3 Mr. Soh commented that the implementation of stepwise CVPs for line violation should not be bundled together with the removal of the current provision for Type 4 price revision. If the Panel supports the proposed implementation of stepwise CVPs, then EMC could put up a proposal to EMA to review the Type 4 price revision conditions.
8.1.3.1 Ms. Loh explained that the conditions which trigger Type 4 price revisions (i.e. when there is a violation in the constraints in D.16, namely scheduled line violation, energy deficit or energy surplus) are the same as those which the proposal would help. Chairman added that implementing the proposal without removing Type 4 price revision essentially means that the proposal affects scheduling, but not settlement outcomes.

8.1.4 To Mr. Kay’s question on why EMC was not recommending for this proposal to be implemented, Ms. Loh replied that the recommendation was arrived at after taking into account the costs and potential benefits of the proposal, together with the industry’s comments received.

8.1.5 After all clarifications and comments have been made, the Chairman called for a vote on the issue:

The following Panel members voted **not to support** the proposed implementation of Stepwise CVPS to Line Violation:

- Marcus Tan (Representative of the Generation Licensee class of market participant)
- Priscilla Chua (Representative of the Generation Licensee class of market participant)
- Daniel Lee (Representative of the Retail Electricity Licensee class of market participant)
- Dr. Toh Mun Heng (Representative for the interests of consumers of electricity in Singapore)

The following Panel members voted **to support** the proposed implementation of Stepwise CVPS to Line Violation:

- Soh Yap Choon (Representative of the PSO)
- Dallon Kay (Representative of the wholesaler electricity market trader class of market participant)

The following Panel member **abstained** from voting:

- Grace Chiam (Representative of the Generation Licensee class of market participant)
- Sean Chan (Representative of the Retail Electricity Licensee class of market participant)
- Luke Peacocke (Representative of the Retail Electricity Licensee class of market participant)
- Lawrence Lee (Representative of the Market Support Services Licensees)
- Frances Chang (Representative for the interests of consumers of electricity in Singapore)

Thus, the Panel, by majority vote, **did not support** the proposed implementation of stepwise CVPs for line violation.
8.2 Proposed Stepwise CVPs for Ramp Rate Violation

Ms. Loh said that the proposal was to soften the penalty associated with ramp rate constraints, such that, should generators be required to ramp above their offered ramp rates (up to their standing ramp rates) to alleviate energy shortfall situations, a lower CVP is incurred rather than the current CVP of 20VoLL.

The proposal is predicated on generators being operationally able to ramp at their standing capability ramp rates. Taking into account the views of the industry and the infrequency of lower offered ramp rates, EMC recommends that stepwise CVPs not be applied to ramp rate constraints.

8.2.1 The following Panel members voted **not to support** the proposal to implement Stepwise CVPS to Ramp Rate Violation:

- Lawrence Lee (Representative of the Market Support Services Licensees)
- Marcus Tan (Representative of the Generation Licensee class of market participant)
- Daniel Lee (Representative of the Retail Electricity Licensee class of market participant)
- Priscilla Chua (Representative of the Generation Licensee class of market participant)
- Grace Chiam (Representative of the Generation Licensee class of market participant)
- Sean Chan (Representative of the Retail Electricity Licensee class of market participant)
- Luke Peacocke (Representative of the Retail Electricity Licensee class of market participant)
- Dallon Kay (Representative of the wholesaler electricity market trader class of market participant)
- Dr. Toh Mun Heng (Representative for the interests of consumers of electricity in Singapore)

The following Panel members **abstained** from voting:

- Soh Yap Choon (Representative of the PSO)
- Frances Chang (Representative for the interests of consumers of electricity in Singapore)

Hence, the Panel by majority vote **did not support** the proposed implementation of stepwise CVPs for ramp rate violation.
9.0 Date of Next Meeting

The 83rd RCP Meeting will be held on 6 November 2015.

There being no other matters, the meeting ended at 12.20pm.

Paul Poh
Chairman

Minutes taken by:
Eunice Koh
Senior Executive - Corporate Secretariat