MINUTES OF THE RULES CHANGE PANEL
126th MEETING
HELD ON WEDNESDAY, 10 NOVEMBER 2021 AT 10.00AM
VIA VIDEO-CONFERENCING

Present: Toh Seong Wah (Chairman) Henry Gan
Soh Yap Choon Teo Chin Hau
Tony Tan Calvin Quek
Carol Tan Sean Chan
Nerine Teo Cheong Zhen Siong
Ho Yin Shan
Fong Yeng Keong Tan Chian Khong

Absent with Dr Toh Mun Heng

Apologies: Poa Tiong Siaw Wang Jing
Li Zhenhui Qin Weixiao
Clarissa Ooi Vincent Wise

1. Notice of Meeting

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

2.2 Matters Arising from 125th RCP Meeting

RC370: Review of Constraints Violation Penalties (“CVP”)

At the 125th RCP meeting, the RCP agreed to defer its decision and had tasked EMC to continue working with the Power System Operator (“PSO”) and the RCP to come to an agreement on the evaluation framework/criteria, so that effective and acceptable solutions can be found.

2.2.1 Ms Wang Jing updated EMC has collaborated with PSO and conducted further study to address the concerns on the impact on the market prices as raised by the RCP at the 125th RCP. She gave an analysis of the proposal’s impact on prices and the reasonings behind. Ms Wang went on to present the following evaluation framework options that EMC has considered:

a. Use Price Outcome as a criterion to determine if reserve deficit should be scheduled
b. Evaluate based on an acceptable/minimal reliability standard set by PSO
c. Evaluate the increase in cost against the Value of Reserve
2.2.2 Mr Y K Fong asked how many periods did the reserve deficits last. Mr Poa Tiong Siaw replied that the number of periods will depend on the nature of the contingency. He said that it can be as short as one period or more than 10 periods based on historical data but the occurrence of more than 10 periods is rare and did not occur during the study period of 2020-2021.

2.2.3 Mr Teo Chin Hau highlighted to the RCP that additional cost of $0.58/MWh is in exchange for a more secured market because the Market Clearing Engine (“MCE”) will be procuring the full requirement of reserve, as most of the deficit periods have been eliminated based on the simulation result using the proposed CVP settings in the study period.

2.2.3.1 Mr Soh Yap Choon sought clarifications on the CVP values used for the simulation in the study period. Mr Poa Tiong Siaw explained that when the new proposed CVP values were applied during the simulation, the price increase was only observed for those periods that previously had a deficit under the existing CVP values.

2.2.4 Option B: Evaluate based on an acceptable/minimal reliability standard set by PSO

2.2.4.1 Mr Teo Chin Hau asked if EMC intends to set the reliability standard first and then use it to back-derive the revised corresponding CVP values. Ms Wang Jing replied that the reliability standard is preferred to be set in the form of megawatt (“MW”) or quantity. Once the reliability standard is built into the CVP blocks to reflect the acceptable level of reserve deficit, the CVP values can be set such that the violation quantity does not exceed the reliability standard.

2.2.4.2 In response to Mr Teo Chin Hau’s question about all requirements being essential, Ms Wang Jing said that from discussion at the last RCP meeting, there seemed to be flexibility for the system to accept some amount of deficit, within the acceptable reliability standard, that does not significantly jeopardise system operations.

2.2.4.3 Mr Teo Chin Hau asked if the objective of this proposal is to further reduce the cost. Ms Wang Jing explained that the objective is not to further reduce the cost but to address the concerns at the last RCP meeting over the increase in cost. The objective here is to minimise cost while meeting the minimum reliability standard. Chairman added that the proposal has to fulfil the PSO’s operations criteria and any resulting price is a natural outcome to meet the criteria. The key question is the required reserve that the MCE has to procure in order to meet those criteria. He clarified that it is not EMC’s intent to consider the price outcome before security, but to have clarity on the security requirements, in order to design the CVP to meet those requirements.

2.2.4.4 Mr Poa Tiong Siaw said that the first round of simulation assumed that all reserves are essential. However, at the last RCP meeting, it was suggested that it was possible the tolerance level can be adjusted. Hence, this proposed evaluation framework (option B) is to define a minimum acceptable reliability standard. He added that this proposed framework is the preferred option because it clearly defines the reliability standard, in MW or as a percentage of load, and it will be clear what the MCE needs.
Mr Soh Yap Choon noted that the reserve deficit usually happens at Block 1 and this proposed evaluation framework reviews this minimum requirement for Block 1. He said that currently quantity has been defined for the different products and there is threshold being set. It is whether to re-define the threshold or not. Ms Wang Jing said that the issue is that the current setting of CVP blocks does not seem to be an acceptable solution as frequent violations were observed in 2018/2019.

Option C: Evaluate the increase in cost against the Value of Reserve

Mr Teo Chin Hau sought clarification on the way assessment is done for this proposed evaluation framework. Ms Wang Jing explained that EMC will need to assess the increase in cost in the total system against the improved reliability measured by the reliability value of the avoided deficit. This can also be built into the market clearing and co-optimisation process.

Mr Teo Chin Hau asked how EMC decides which periods are co-optimised. Ms Wang Jing said that one solution will be to establish the reliability value of the reserve and set it as the CVP value for reserve. Once the cost to procure reserve exceed this reliability value (i.e. reserve CVP), the MCE will not procure it. This is similar to the Operating Reserve Demand Curve presented in the concept paper to the RCP in July 2021.

With respect to the analysis of the impact on prices, Ms Wang Jing explained that in her presentation at the last RCP meeting, she had only presented the price impact for the 93 deficit periods and the results showed that price had increased significantly. This is expected in order to reduce deficit. It was noted that the 93 deficit periods make up less than 1% of the total study periods. The impact will be much less on a yearly basis.

Mr Soh Yap Choon noted that the study period presented at the 124th RCP meeting was from 2018 to 2019 and it differs to the current study period from 2020 to August 2021. He also noted that the price increase is dependent on wide range of variants such as market conditions, demand and supply situation or offers and bids from the market participants.

Mr Teo Chin Hau noted that both Options B and C requires inputs from PSO and asked which is the better option for PSO. Mr Soh Yap Choon replied that both Option B and C are similar except Option C uses the ORDC to determine the CVP values in terms of cost against reliability.

Mr Teo Chin Hau sought confirmation that there is a change in the definition of essential requirements. Mr Soh Yap Choon shared that the current requirements remain unchanged to ensure the reliability of the system. The current Block 1 CVP values has a level of compromise of 20% of the requirement for primary reserve and 30% of the requirement for contingency reserve. Ms Wang Jing asked if it is an acceptable outcome for the MCE to procure only 0.8 of primary reserve and 0.7 of...
contingency reserve requirements. Mr Soh Yap Choon said that the current situation is still manageable as there are additional spare capacity in the system to manage system reliability even though the MCE and CVP has scheduled deficits or shortfalls.

2.2.9 Mr Soh Yap Choon commented that based on historical records, most of the time the deficits occurred because of the reserve adjustment factor (“RAF”) of 1.5 times. He informed that PSO intends to purchase fast start services in the near future and it is likely that the RAF will be reviewed and reduced to 1. This will lower the procurement of contingency reserves from the market and may also indirectly reduce the occurrence of deficits.

2.2.9.1 Mr Teo Chin Hau noted Mr Soh Yap Choon’s comments. He said that the question should be whether MCE should procure the full amount of contingency reserve regardless of the RAF. He opined that the revised CVP values should be effected now if the MCE is to procure the full amount of contingency reserve. This is because when the RAF is lowered, there may be a chance that the same reserve deficit will occur again.

2.2.9.2 Mr Tony Tan agreed with Mr Teo Chin Hau as it is not known when the factor will be adjusted downwards. In the meantime, the system will continue to generate a distorted outcome where the highest unit actually runs at the highest load and insufficient reserve is procured to cover its risk, which is something that is not desired.

2.2.9.3 Chairman asked about the timeline for the fast start procurement and revision of the reserve adjustment factor. Mr Soh Yap Choon said it is likely in mid-2023.

2.2.10 Mr Soh Yap Choon informed that he will abstain from voting on this paper as the study had only looked at one proposal which is increasing the price to clear all reserve deficit. He said that there could be other alternatives or proposed solution such as lowering the energy or contingency reserve price caps, that may also create a different set of outcomes but will achieve the same objective.

2.2.10.1 In response to Mr Soh’s proposal of lowering energy or contingency reserves price cap as an alternative approach, Mr Poa Tiong Siaw said that price caps are universally applied in the market for every possible dispatch scenario. There is also a regulatory aspect to the use of price caps. Changing them will inevitably impact a broad range of outcomes and design intent. The problem we are discussing here however is to address the specific CVP scenario in which reserve deficits are scheduled when there is sufficient capacity being offered in the market. Reviewing energy or reserve price caps will require an extensive exercise and will have impact on outcomes of the market which are not related to this issue.

2.2.11 Chairman reiterated that as long as the system fulfils the reserve requirements and does not procure over and above those requirements, the resulting market prices is just an outcome. He said that there have been exhaustive discussions between the RCP members over multiple meetings on this proposal. He invited the RCP to vote on whether they support the proposed rules modifications presented at the 125th RCP meeting to give effect to the revised CVP settings.
2.2.11.1 The RCP by majority vote supported the proposed rules modifications presented at the 125\textsuperscript{th} RCP meeting.

The following RCP members supported:

- Mr Teo Chin Hau (Representative of Generation Licensee)
- Mr Tony Tan (Representative of Generation Licensee)
- Mr Calvin Quek (Representative of Generation Licensee)
- Ms Carol Tan (Representative of Transmission Licensee)
- Mr Sean Chan (Representative of Retail Electricity Licensee)
- Ms. Ho Yin Shan (Representative of the Market Support Services Licensee)

The following RCP members did not support:

- Mr Henry Gan (Representative of EMC)
- Mr Cheong Zhen Siong (Representative of Wholesale Electricity Trader)
- Ms Nerine Teo (Representative of Retail Electricity Licensee)
- Mr YK Fong (Representative of Consumers of Electricity in Singapore)
- Mr Tan Chian Khong (Person experienced in financial matters in Singapore)

The following RCP member abstained:

- Mr Soh Yap Choon (Representative of the PSO)

3. Monitoring List

The RCP noted the content of the Monitoring List.

4. Summary of Outstanding Rule Changes

The RCP noted the summary of outstanding rule changes.

5. Rules Change Work Plan Status Update

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

6. Mode of Payment for Annual Market Participant and Annual PSO Fees

(Paper No. EMC/RCP/126/2021/RC372)

Mr Vincent Wise presented the paper which reviewed the provisions in the current market rules for collection of fees from applicable Market Participants, Market Support Services Licensee, and other persons to recover the administrative costs of EMC and PSO and proposed changes to be made to clarify that EMC-initiated electronic funds transfer (EFT) as the primary payment method for such fees.
6.1 Mr Vincent Wise briefed the RCP on the issues with the current arrangement and the proposed solution. He informed the RCP that the proposed modifications were published on 30 September 2021 for consultation and no comments were received.

6.2 EMC recommended that the RCP:
   a) support the proposed rule modifications;
   b) recommend that the EMC Board adopt the proposed rule modifications; and
   c) recommend that the proposed rule modifications come into force 1 calendar day after the date on which the approval of the Authority is published by the EMC.

6.2.1 The RCP unanimously supported EMC's recommendations above.

7. Designation of Default Bus of Generation Settlement Facilities
   (Paper No. EMC/RCP/126/2021/RC373)

Ms Qin Weixiao presented the proposal to allow the PSO to designate the main default bus and alternate default bus of a generation settlement facility (“GSF”) to be in different substations.

7.1 Ms Qin Weixiao gave a background and analysis on the scope, benefit and cost of the proposal. She went on to present the proposed modifications to the Market Rules. She informed the RCP that the proposed modifications were published on 14 October 2021 for consultation and comments received from Senoko Energy were responded to.

7.2 Mr Soh Yap Choon noted the intention of the proposal and asked if the designation of alternate default buses of a GSF to a nearby substation will be done offline. Ms Qin Weixiao replied that EMC will work with PSO offline on the designation. She added that the proposed rule modifications will give PSO the flexibility when needed and not be bounded by the rules to assign from the same substation.

7.3 Mr Henry Gan commented that the proposal will avoid re-runs arising from this islanded situation that EMC may face from time to time and will also allow the market to have more price certainty moving forward. EMC Market Operations will work with PSO to ensure the smooth execution of this proposal.

7.4 EMC recommended that the RCP:
   a) support the proposed rule modifications;
   b) recommend that the EMC Board adopt the proposed rule modifications; and
   c) recommend that the proposed rule modifications come into force 1 calendar day after the date on which the approval of the Authority is published by the EMC.
7.4.1 The RCP **unanimously supported** EMC’s recommendations above.

There being no other matters, the meeting ended at 12.12pm.

**Toh Seong Wah**  
Chairman

Minutes taken by:  
Angeline Tan  
Executive, Legal and Corporate Secretariat