

**MINUTES OF THE RULES CHANGE PANEL  
145<sup>th</sup> MEETING  
HELD ON THURSDAY, 16 JANUARY 2025 AT 10.00AM  
AT ENERGY MARKET CO. PTE LTD  
4 SHENTON WAY #03-01  
SGX CENTRE 2, SINGAPORE 068807**

Present:                      Toh Seong Wah (Chairman)                      Henry Gan  
                                     Soh Yap Choon    Koay Yi Jing  
                                     Andrew Tan    Matthijs Jan Guichelaar  
                                     Wong Yew Chung                                        Cheong Zhen Siong  
                                     Fong Yeng Keong                                        Teo Chin Hau  
                                     Dallon Kay     Calvin Quek  
                                     Dr Toh Mun Heng                                        Teo Swee Teng

Absent with                      Sherman Toh  
Apologies:

In Attendance:              Poa Tiong Siaw    Li Zhenhui  
(EMC)                              Lim Chern Yuen    Fernanda Tham  
   Vincent Wise    Reuben Ngiau

	<b>Minutes of 145<sup>th</sup> RCP Meeting – 16 January 2025</b>	<b>Action</b>
<b>1.</b>	<b>Notice of Meeting</b>  The Chairman called the meeting to order at 10.05am. The Notice and Agenda of the meeting were taken as read.	
<b>2.</b>	<b>Confirmation of Minutes of the 144<sup>th</sup> Rules Change Panel Meeting</b>  The Minutes of the 144 <sup>th</sup> Rules Change Panel (“RCP”) meeting, held on 14 November 2024, were approved by the RCP.	
<b>3.</b>	<b>Update of Monitoring List, Summary of Outstanding Rules Change Submissions, and RCP Work Plan Status Update</b>  Mr Li Zhenhui presented the Update of Monitoring List, Rule Change Submission, and RCP Work Plan Status Update.	
<b>4.</b>	<b>RC388: Registration of Facilities Connecting to the Distribution Network</b>	
4.1	Mr Lim Chern Yuen presented the proposed market rules and market manual modifications to give effect to CP98: Registration of Facilities Connecting to the Distribution Network to the panel.  (At 10.10 am, Mr Matthijs Jan Guichelaar joined the meeting)	
4.2	Mr Lim highlighted that EMC received no industry comments on the proposed modifications which EMC published on 20 Dec 2024.	

4.3	<p>Hence, EMC recommends that the RCP:</p> <ul style="list-style-type: none"> <li>• Support the proposed modifications as set out in Annex 1 and 2; and</li> <li>• Recommend that the EMC Board adopts the proposed modifications as set out in Annex 1 and 2.</li> </ul> <p>The RCP <b>unanimously supported</b> the EMC's recommendation.</p>	
5.	<b>RC390: Market Clearing, Compensation, and Offers for Energy Storage Systems</b>	
5.1	<p>Mr Lim presented the paper to the panel. He explained the additional rule changes required on top of the approved rule changes relating to modelling of energy storage systems (RC383).</p> <p>Mr Lim shared that EMC recommends that the RCP refer the proposed modifications to the Technical Working Group (TWG) for its consideration and recommendation.</p>	
5.2	<p>The paper proposed four categories of modifications:</p> <ul style="list-style-type: none"> <li>• Modelling of energy storage systems (ESS) in the Market Clearing Engine (MCE);</li> <li>• Compensation to ESS arising from market energy price revision;</li> <li>• Compensation to ESS in the event of load shedding; and</li> <li>• Requirements for standing offers and offer variations by ESS.</li> </ul>	
5.3	Mr Lim presented an overview of the additional rule modifications regarding ESS modelling in the MCE.	
5.4	<p>Mr Lim then presented on the issue of ESS's compensation arising from market energy price (MEP) revision. Mr Lim shared that EMC's proposal is premised on the following:</p> <ul style="list-style-type: none"> <li>• An ESS should be compensated if it was scheduled to discharge, but had its MEP subsequently revised downwards;</li> <li>• An ESS should be compensated if it was scheduled to charge, but had its MEP subsequently revised upwards; and</li> <li>• The compensation formulae should be adjusted to reflect the ESS' offers containing 5 pairs for charging, and 5 pairs for discharging.</li> </ul> <p>On compensation payable when an ESS was scheduled to discharge, Dr Toh Mun Heng queried if the modifications are for discussion or are they already determined. Mr Lim replied that the proposed methodology exists for conventional generators but has not been prescribed for ESS.</p>	

5.5	<p>Mr Calvin Quek asked if such compensation is initiated by the market participant (MP). Mr Lim affirmed Mr Quek's understanding.</p> <p>Mr Quek proposed that the TWG investigate automating the compensation process given that most data are available in the MCE.</p> <p>Mr Henry Gan responded that while he welcomes process automation to reduce stakeholders' administrative burden, there is a need to balance that against system costs and the frequency of compensation claims.</p> <p>Mr Quek concurred with Mr. Gan. He added that if automation costs are not significant and it reduces stakeholders' administrative burden, then it would be worth considering.</p>	
5.6	<p>Mr Soh Yap Choon commented that any broader review on compensation ought to consider the differences between ESS and other generators. For example, the charging and discharging costs to restore its SoC may be relevant for ESS but not for other generators.</p> <p>Mr Soh further suggested that the TWG in its review, should consider situations when the ESS is charging in providing ancillary services, and when the ESS is charging to restore its SoC, thus acting like a load.</p> <p>Mr Poa Tiong Siaw replied that any review will involve establishing consistent principles. Generally, barring load shedding events, compensation in the wholesale market is intended to be cost-based.</p>	
5.7	<p>Mr Dallan Kay enquired on, in the event of an upward price revision, whether a generator should be compensated for foregone quantities that it was not scheduled in real time but would have been scheduled at the higher revised price.</p> <p>Ms Koay Yi Jing opined that compensation based on Mr Kay's scenario relate to opportunity costs, whereas the current compensation framework is based on actual costs incurred.</p> <p>Mr Gan further shared that in such events, the quantities used for settlement will be based on SP meter data.</p>	
5.8	<p>Mr Lim then presented EMC's proposal to compensate the ESS if the ESS was scheduled to discharge during a load shedding event, resulting in "lost profit" for the ESS.</p> <p>Dr Toh asked if a load shed event can be likened to the release of a stockpile when there is a shortfall. Mr Lim replied that Dr Toh could be referring to strategic reserve, which are beyond the scope of these rule changes.</p> <p>Mr Kay asked if this load shedding event compensation proposal is related to recent changes in the Electricity Act. Mr</p>	

	<p>Soh replied that recent changes to the Electricity Act is not related to proposed modifications by EMC, as EMC's modifications take reference from rules relating to compensation during load shedding since market start.</p>	
5.9	<p>Mr Soh asked whether compensation was provided during the partial blackout event in September 2018.</p> <p>Mr Gan replied that compensation under load shedding would only be relevant if PSO were to send a load shed file to EMC in advance, such that the MCE can incorporate the intended load shedding. Mr Gan clarified that for the 2018 event, no load shed file was sent over, and therefore no compensation was provided.</p> <p>Mr Kay asked if load shedding can occur without an emergency operating state (EOS) being triggered. Mr Soh replied that load shedding does not necessarily involve declaration of an emergency operating state.</p> <p><b><u>Post-meeting Note:</u></b> Mr Soh clarifies that if indeed load shedding has occurred in the power system, an EOS will be declared. However, if it is a projected shortfall/load shedding, then EOS will not be declared.</p> <p>Dr Toh asked what would be done if there is a projected shortfall. Mr Soh replied that if a shortfall is projected, PSO may instruct generators to run up via the Directed Supply Scheme. If there is a shortfall in real-time, PSO may instruct open cycle gas turbines to run up.</p>	
5.10	<p>Lastly, Mr Lim presented on market manual modifications for offers by ESS, before presenting a summary of the overall proposed rule modifications in this paper.</p>	
5.11	<p>Mr Lim summarised the intention of the proposed market rule and market manual changes, these being to:</p> <ul style="list-style-type: none"> <li>• increase modelling accuracy of ESS in the MCE,</li> <li>• allow for ESS to claim fair compensation, and</li> <li>• clarify requirements for ESS energy storage offers.</li> </ul> <p>EMC recommended that the RCP consider and refer the said proposal to the Technical Working Group (TWG), for it to consider and make its recommendations to the RCP.</p>	
5.12	<p>Ms Koay asked if these changes would impact the previously shared costs and timelines in RC383 and RC386.</p> <p>Mr Lim responded that it is possible for these changes to be incorporated without impacting the timeline, with no additional external costs to be recovered from the market.</p>	

5.13	<p>Ms Koay sought clarification on which sections of the proposed rules modifications should be referred to the TWG.</p> <p>Mr Poa replied that the intention is to refer all the proposed rule modifications to the TWG.</p> <p>Mr Quek suggested that the RCP may review the TWG's progress at the next RCP meeting and decide if there are areas that need to be prioritised first to meet the system change timeline.</p>	
5.14	<p>Mr Kay asked if the relaxation of gate closure provisions during load shedding can also be considered in this workstream.</p> <p>Mr Teo Chin Hau replied that load shedding events are usually a last resort from the PSO's perspective; it is likely that no further supply side resources can be called upon, therefore gate closure exemptions may not alleviate the situation.</p> <p>Chairman replied that delivering the necessary changes to meet the timeline for the system changes remains the priority.</p>	
5.15	<p>Chairman then summarised that all proposed modifications will be referred to the TWG.</p> <p>There was no objection from RCP members.</p>	TWG

There being no other matters, the meeting ended at 11.14 a.m.

**Toh Seong Wah**  
**Chairman**

Minutes taken by:  
Ivy Leong  
Legal, Compliance & Corporate Secretarial Executive