

Response to Comments Regarding Design of Automatic Penalty Scheme

No.	Industry Comments	Response
1	Issue: Additional scenarios to consider for exemption from APS	
Tuas	(a) Plant issues resulting in automatic runback of load or a manual intervention to bring load to a safe operating level instead of tripping the plant and thereby enhancing or preserving system security	<p>The suggestion to exempt partial outage (load runback) from the APS is not justifiable. Gencos should properly maintain their power plants to prevent partial outage.</p> <p>Unlike tripping of a generation registered facility (“GRF”), partial outage of a GRF is not included in that GRF’s Standing Probability of Failure (“SPF”), which is used to calculate the GRF’s reserves responsibility share. There is no justification to exempt partial outage from the APS.</p>
	(b) Deviation in loading level as a result of decay in gas system pressure (to preserve gas system security) or a gas system stress event	<p>Where applicable, the affected GRF is required to perform fuel changeover (“FCO”) in accordance with the Transmission Code in the event of gas supply disruptions. Chapter 5, Section 3.7.3.7 in the proposed Rule Changes provides for GRFs undergoing FCO to be exempted from APS.</p>
	(c) System stress event which require a manual control override of AGC to prevent the unit from tripping out due to instability	<p>Any instruction or approval given by PSO for a GRF to go local control will include associated specific dispatch instruction by PSO specifying the output level. The GRF deviating from its real-time dispatch schedule as a result of following PSO’s dispatch instruction is exempted from APS.</p>

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YLTPS	<p>(d) There could be a scenario where <u>gas offtake has to be reduced with a corresponding reduction in generation output to prevent the gas system from entering into system stress but there is no fuel changeover involved</u>. Such events should have the automatic penalty waived</p>	<p>A GRF deviating from its real-time dispatch schedule as a result of following PSO's dispatch instruction (e.g. to prevent gas system stress) is exempted from APS.</p>
	<p>(e) The generation facility could have been responding to AGC signals but fall out of AGC control towards the end of the period without any chance of reaching an energy dispatch level within 10MW of the scheduled dispatch. The falling out of AGC control could be because of equipment failure on the market participant's end but could also be because of equipment failure on PSO end with PSO requesting the market participant to switch its generation facility to local control. Both such scenarios should allow for a waiver of the automatic penalty.</p> <p>(f) We note that there can be <u>forced outages with a reduction in output which may be partial and not total</u> and without an accompanying automatic disconnection from the transmission system, such forced outages should also excuse the affected generation facility from being subject to the automatic penalty. The forced outage may be</p>	<p>Refer to 1(a) and 1(c)</p>

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	<p>triggered by action to protect the safety of employees or the public or prevent substantial damage to equipment, facilities or the environment, or to prevent a complete forced outage. An example could be <u>filter clogging due to climatic conditions resulting in an increase in differential pressure</u>. If the differential pressure exceeds the threshold, the generation facility would automatically trip (complete forced outage). To prevent this from happening, the generation output would be reduced to stop the differential pressure from hitting the automatic tripping threshold. <u>An example of a partial forced outage for steam plants would be the load runback situation which is where there is a reduction in the output of a steam plant due to equipment failure such as the outage of a feedwater pump or forced draft fan.</u></p>	

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YTLPS	<p>(g) We would like to clarify that for "was being <i>start-up</i> or <i>shut-down</i> in accordance with its aforesaid <i>real-time dispatch schedule</i> or <i>short-term schedule</i> (as the case may be)" whether this would include periods during which the generation facility for at least part of the period, the generation facility was being started up or shut down. For example, a generation facility is scheduled for say 270 MW for energy for a particular period and the generation facility has a Minimum Stable Load of 200MW. At the start of a period, its output is at 190MW and it reaches 200MW within the period which then means it has finished starting up but falls short of the 270MW energy schedule at the end of the period such that it deviates by more than 5MWh as calculated using the formula in the proposed section D.3.1 of Appendix 5D. In such a scenario, would it be considered to have been starting-up although not for the entire period and so not subject to the automatic penalty? Our view is that it should not be subject to the automatic penalty.</p>	<p>A GRF is considered to be on start-up or shut-down if its scheduled output is increasing (during a start-up) or decreasing (during a shut-down) compared to the preceding dispatch period, and the scheduled output is less than its MSL.</p>

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Pacific Light Power	(h) PLP would request that a short duration be added to the definition of startup such that there is an agreed period after the unit has reached minimum stable load before the penalty criteria is applied	Refer to 1(f)																														
Senoko	(i) The design of the APS does not impose penalties on deviations that result from a forced outage. Can you please confirm the treatment if <u>a unit within a combined-cycle facility trips (e.g. an ST) and that other units within that facility continue to provide output?</u>	<p>Tripping of any generating unit(s) of a GRF (e.g. a GT/ST of a CCGT) resulting in disconnection of the entire GRF from the grid is considered a forced outage. This will be exempted from APS but will be included in the SPF of the GRF. If any of the GT/ST of the GRF is still connected to the grid, it is a partial outage and subject to APS. Please refer to table below:</p> <table border="1" data-bbox="1070 730 1926 1329"> <thead> <tr> <th data-bbox="1070 730 1227 767">Scenario</th> <th data-bbox="1227 730 1330 767">GT1</th> <th data-bbox="1330 730 1503 767">GT2</th> <th data-bbox="1503 730 1666 767">ST</th> <th data-bbox="1666 730 1926 767"></th> </tr> </thead> <tbody> <tr> <td data-bbox="1070 767 1227 879">A (2-2-1 multi-shaft)</td> <td data-bbox="1227 767 1330 879">Trip</td> <td data-bbox="1330 767 1503 879">Run</td> <td data-bbox="1503 767 1666 879">Run</td> <td data-bbox="1666 767 1926 879">Forced outage of GRF1</td> </tr> <tr> <td data-bbox="1070 879 1227 991">B (2-2-1 multi-shaft)</td> <td data-bbox="1227 879 1330 991">Run</td> <td data-bbox="1330 879 1503 991">Trip</td> <td data-bbox="1503 879 1666 991">Run</td> <td data-bbox="1666 879 1926 991">Forced outage of GRF2</td> </tr> <tr> <td data-bbox="1070 991 1227 1102">C (2-2-1 multi-shaft)</td> <td data-bbox="1227 991 1330 1102">Run</td> <td data-bbox="1330 991 1503 1102">Run</td> <td data-bbox="1503 991 1666 1102">Trip</td> <td data-bbox="1666 991 1926 1102">NO forced outage</td> </tr> <tr> <td data-bbox="1070 1102 1227 1254">D (1-1-1 type)</td> <td data-bbox="1227 1102 1330 1254">Trip</td> <td data-bbox="1330 1102 1503 1254">Not applicable</td> <td data-bbox="1503 1102 1666 1254">Trip (following tripping of GT)</td> <td data-bbox="1666 1102 1926 1254">Forced outage</td> </tr> <tr> <td data-bbox="1070 1254 1227 1329">E(1-1-1 type)</td> <td data-bbox="1227 1254 1330 1329">Run</td> <td data-bbox="1330 1254 1503 1329">Not applicable</td> <td data-bbox="1503 1254 1666 1329">Trip</td> <td data-bbox="1666 1254 1926 1329">NO forced outage</td> </tr> </tbody> </table>	Scenario	GT1	GT2	ST		A (2-2-1 multi-shaft)	Trip	Run	Run	Forced outage of GRF1	B (2-2-1 multi-shaft)	Run	Trip	Run	Forced outage of GRF2	C (2-2-1 multi-shaft)	Run	Run	Trip	NO forced outage	D (1-1-1 type)	Trip	Not applicable	Trip (following tripping of GT)	Forced outage	E(1-1-1 type)	Run	Not applicable	Trip	NO forced outage
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Sembcorp	<p>(j) New Section 3.7.3 states the obligation of a generation registered facility under the Automatic Penalty Scheme and a list of exception. For a 2+2+1 multi-shaft units registered as two separate generation registered facility, it is important to state clearly that the exception should be applicable to both units when the list of exceptions occur on one of the generation registered facility has a consequential impact on the other unit resulting in deviation. For example, one of the unit may need to be taken off AGC to establish stable condition to enable the other tripped unit to synchronise back.</p>	<p>Outage of one GRF should have no consequential impact on the other GRF if they are registered as two independent GRFs. If there is consequential impact on the GRF that did not trip, then the two GRFs should not be considered as two independent GRFs and re-tests would have to be conducted to re-verify their independence, failing which the two GRFs would have to be re-registered as a single GRF.</p>
	<p>(k) New Section 3.7.3.4 and 3.7.3.5 only classify the period when the forced outage occurred and the period immediately following the outage as exception. <u>The period before the occurrence of the forced outage should also be included as an exception because the generation registered facility could be ramping down to protect the machine leading to the forced outage.</u></p>	<p>Refer to 1 (a).</p>
	<p>(l) For 2+2+1 multi-shaft units registered as two separate generation registered facility, we would like to confirm that in the event of a ST tripped, the exception is still applicable even</p>	<p>Please refer to 1(i)</p>

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	<p>though the generation registered facility is still connected to the transmission system. If it is not, appreciate EMC to make the necessary amendments to include such event under exception. A suggestion is to change GRF to GRF's generators to reflect the outage of either ST or GT should not be subjected to financial penalty.</p>	
	<p>(m) New Clause Chapter 8. Section 1.1., insert a new definition of start-up. We would like to confirm that start up in respect to GRF is interpreted as from the beginning of synchronisation to the 1st period where scheduled load is at MSL (inclusive).</p>	<p>Refer to 1(f)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Keppel Seghers and Senoko Waste-to-Energy</p>	<p>(n) Unlike Power Generation Plants with a relatively constant rate of burner firing, Waste-to-Energy plant main source of fuel is refuse with varying NCV characteristics. The type, nature and sizes of refuse that WTE plant receives are beyond our control and may affect the stability of the steam production. Failing to synchronise the generator to grid should not incur penalty as this is due to technical problem which is not deliberate.</p>	<p>Based on system records, it is rare for WTE plants to deviate from their real time dispatch schedule/short term schedule for more than 5MWh for a given dispatch period.</p> <p>Where WTE plant operators were penalised under APS but the deviation from dispatch schedules was to avoid endangering the safety of any person, or substantially damaging equipment or violating applicable law, , they can appeal to the MSCP for a penalty waiver with justifications.</p>

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2	Issue: No requirement for APS as Market Rules already penalise unreliable gencos	
Tuas	<p>The current market rules already imposes commercial penalties for a plant that is unreliable – ie. increased spinning reserve charge for unreliability or buying back at high pool prices to service contracts sold earlier at lower prices or forgoing high pool revenues when plant output is constrained for whatsoever reasons. There is thus little reason to impose a further administrative penalty when such commercial penalties are already embedded in the current market rules/market design.</p>	<p>The APS is intended to incentivise market participants to minimise deviation from dispatch schedules in respect of their GRFs. If market participants are already incentivised to generate according to the dispatch schedules as they will be subject to commercial penalties for deviations, they should not be concern about infringing the APS.</p>

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3	Issue: Exemptions list cannot cover broad range of scenarios and PSO should ultimately decide whether an exemption applies	
YTLPS	(a) It is difficult to cover all possible scenarios where the automatic penalty should not be applied. It would be advisable to allow for PSO to have the flexibility to designate a generation facility as not being a deviating generation registered facility for cases where PSO is satisfied that the deviation in generation output was not due to wilful or negligent action by the market participant.	<p>The exemption list already covers all known situations in which the APS should reasonably not apply. Beyond the exemption list, the APS is intended to deter deviations from dispatch schedules regardless of whether they are caused by wilfulness or negligence.</p> <p>Where any GRF was penalised under APS but the deviation from dispatch schedules was to avoid endangering the safety of any person, or substantially damaging equipment or violating applicable law, the relevant Market Participant can appeal to the MSCP for a penalty waiver with justifications.</p>

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Senoko	(b) In general, the penalty should be focused on deviations that are wilful or negligent. There are many potential scenarios that could give rise to deviations that should not be penalised under those criteria (e.g., a frequency shift causing a deviation of a non-AGC unit near the end of a dispatch period, ramping due to gas disruptions). Given that it may not be possible to specify all of these potential exemptions in the rules, we propose that PSO should be able to consider such factors before determining that a GRF has deviated.	
4	Other issues	
Senoko	(a) The proposed Rules and Market Manual did not state the exact time (with respect to the dispatch period) when the PSO will record the “BeginGeneration” and “EndGeneration” values. Can you please confirm that it will be at a precisely defined point in time and specify this in the Rules or Manual as appropriate?	<p>PSO will record the “BeginGeneration” and “EndGeneration” at the start and end of the relevant half hour trading period respectively. For Period 1, BeginGeneration will be recorded at 0000 while EndGeneration will be recorded at 0030.</p> <p>Both terms (“BeginGeneration” and “EndGeneration”) are already defined in the proposed market rules (section D.2.1 of chapter 5).</p>

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Sembcorp	<p>(b) New Section 3.7.4 should state that the MSCP should take into consideration the financial penalty applied under the automatic financial penalty scheme when imposing additional penalties on market participant of deviating generation facilities.</p>	<p>For the MSCP to determine any reasonable amount of additional penalty, it is beyond reasonable doubt that the MSCP should take into consideration the penalty amount already imposed under the APS.</p> <p>Section 7.2.11.16 of Chapter 3 of the market rules also states that when the MSCP is determining the amount of financial penalty, it would consider any submissions made by the party in breach. If the MP has already been penalised under APS, the MP can include this in its submission for MSCP's consideration.</p>
	<p>(c) New Clause D3.2 computes the financial penalty based on "USEP + HEUC". Generator are paid based on MNN so the penalty should be reference back to the MNN.</p>	<p>It is not right to reference the penalty to the Market Energy Price ("MEP") as suggested by Sembcorp as the APS is meant to capture the impact of any deviation by a GRF on the power system, including the price impact on offtake load.</p>
	<p>(d) We noted that there is a minimum financial penalty of \$5,000 and that the MSCP continues to have the power to impose additional sanction or penalties on market participants of deviating generation registered facilities. We would like to suggest for a simplification of the financial penalty i.e. set it at \$5,000 per dispatch period. This shall simplify the settlement process but not undermine the effectiveness because the MSCP still has the right to impose addition sanction or penalties.</p>	<p>Sembcorp's suggestion to set the financial penalty at \$5,000 per dispatch period defeats the purpose of the APS which is to incentivise market participants to minimise deviation from dispatch schedules in respect of their GRFs.</p> <p>The MSCP can take into account the penalty under APS in deciding any additional penalty to be imposed on a recalcitrant market participant.</p>

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	<p>(e) New Clause D4.8.1 state that the EMC shall proceed to impose the financial penalty on the preliminary financial penalty statement if the PSO did not respond to the EMC on the accuracy of the data is not acceptable. As this is a penalty imposed on a generation facility, PSO must confirm the accuracy of the data when a duly submitted notice of error has been furnish on the accuracy of the data.</p>	<p>PSO will respond to EMC within the stipulated timeline.</p> <p>In the event that PSO could not respond in time and the Market Participant disagrees with the final financial penalty statement, the Market Participant can resort to arbitration to resolve the issue.</p>
<p>Pacific Light Power</p>	<p>(f) The financial penalty formula indicated is only applicable to a Generation Registered Facility therefore a similar penalty methodology with appropriate defined terms need to be added in the rules for an embedded generation facility.</p>	<p>Any Embedded Generation Facility whose capacity is greater than or equal to 10 MW is also required to be registered in the market as a GRF. The same APS rules/formula are applicable to any GRF, regardless of whether or not it is an embedded generation facility.</p>

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	<p>(g) PLP note that a market participant has one day to submit a notice of error to EMC upon issuance of the PFPS. The process for disputing of penalty notices for preliminary data should be consistent with the principles established under the Market Rules. PLP would request confirmation of the process for a financial penalty recovery/repayment where an error in the calculation of a financial penalty is only discovered after the Preliminary Settlement Statement.</p>	<p>On T+4, MPs will receive the data from EMC on the deviating generation registered facilities (if any) on which APS will be imposed. The notice of error must be submitted before T+ 7. MPs actually have 3 days to prepare the submission.</p> <p>It is in the interest of the MPs to check the PFPS and submit any notice of error promptly. If the error is only discovered after T+7, the MP is not permitted to dispute the error, unless the MP can demonstrate that it could not, with the exercise of due diligence, have submitted a duly submitted notice of error .</p>