DECISION PAPER

PROPOSED MODIFICATIONS TO TRANSMISSION CODE

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1. Background

1.1. The Transmission Code sets out the rights and obligations of the Transmission Licensee, together with the rights and obligations of the users of the Transmission System. The Transmission Code also sets out the technical requirements to be met by those who are connected to the Transmission System.

2. Proposed Modification

2.1. EMA had proposed modification to the Transmission Code to require Generation Licensees to have sufficient inventory of critical spares for timely replacement of faulty parts of any generation facility so that the generation facility can be returned to service in the shortest possible time.

3. Public Consultation

3.1. Pursuant to Section 1.6 of the Transmission Code, EMA had sought public feedback on the proposed modification. Feedbacks from the respondents, namely YTL PowerSeraya, Tuas Power Generation, Keppel Merlimau Cogen, Senoko Energy and Pacific Light Power were received when the consultation closed on 25 September 2013.

3.2. Appendices 1 and 2 set out the modification to the Transmission Code (taking into account the feedbacks), and EMA's response to the feedbacks respectively.

4. EMA's Decision

4.1. EMA has carefully considered the feedbacks from the respondents and has decided to modify the Transmission Code as set out in Appendix 1 (taking into account the feedbacks). The proposed Code modification will come into effect on 14th November 2013.

Appendix 1

Table 1: Proposed Modification to the Transmission Code

Modification Ref. No.	Clause	Original Text	Modified Text
TC/2013/1	9.2.5	New Clause.	The Generation Licensee shall ensure that it has sufficient inventory of critical spares for timely replacement of faulty parts of any *generation facility* so that the *generation facility* can be returned to service in the shortest possible time. Without prejudice to the generality of the foregoing, the Generation Licensee shall in particular ensure that each *generation facility* which is a *combined-cycle plant* or gas turbine shall have one complete set of spare air filters within Singapore at all times.

Appendix 2

Table 2: EMA's Response to Public/Industry Feedback

Public/Industry	Comments	EMA's Response
Keppel Merlimau Cogen (KMC)	KMC recognized the need to have a robust air filtration system to the gas turbines to deal with hazy conditions and had taken this into consideration in the design of our GRF 3 and GRF 4, so both units now have built-in redundancy to deal with such situations. KMC will also stock adequate spare sets of air filters on site to further improve the availability of our power plant in hazy conditions, taking into account the actual operational conditions and storage space of our plant.	The proposed modification to the Transmission Code is to ensure that there are sufficient generation capacities available in the system to meet demand and ensure system security and reliability at all times. The requirement to stock one set of spare air filters for each combined cycle plant or gas turbine at all times is necessary to cater for all operational conditions. To address the concern of space constraint within a generating station, EMA will allow off-site storage within Singapore. The proposed clause will be amended accordingly.
Pacific Light Power (PLP)	PLP is in agreement that certain strategic spares should be available to a generator to minimize operational disruptions. PLP accepts that some spares should always be located at the plant site for immediate access. However, PLP would propose that generators are permitted to use offsite storage for certain amounts of spares. This offsite storage should be accessible at short notice	To address the concern of space constraint within a generating station, EMA will allow spares to be kept off-site within Singapore. The proposed clause will be amended accordingly.

	under pre-defined contractual timelines.	
Senoko Energy (Senoko)	To ensure that the new clause is not unduly open-ended, Senoko requests that the following amendment be made to the first sentence; 9.2.5 Acting as a reasonably prudent operator in accordance with industry best practice, the Generation Licensee shall ensure that it has sufficient inventory of critical spares for timely replacement of faulty parts of any *generation facility* it owns or operates so that the *generation facility* can be returned to service in the shortest possible time, if required to do so.	EMA disagree that the original draft is open-ended. Nevertheless, arising from the feedback from some Generation Licensees, EMA will amend the proposed clause to allow spares to be kept off-site within Singapore.
Tuas Power Generation	The purpose of the Transmission Code is to set out the minimum conditions that the Transmission Licensee must meet in carrying out its obligations. In addition, the Code sets out the technical requirements for those who are connected to the transmission system. We are of the view that the provision of spares for Generation Licensees' generating units as set up in the proposed new clause 9.2.5 is clearly an operational matter that should be at the discretion of the Generation Licensees operating in a pool based electricity market. The Generation Licensees are well aware of potential significant financial exposure if its generating unit is not able to return to service due to non-availability of spares. In particular, we highlight that the second paragraph of the new clause which states the requirement of one spare air filter set for each	The Transmission Code sets out the minimum technical requirements (both design & operational) for compliance of not only the Transmission Licensee but also any person including Generation Licensees whose facilities are connected to the transmission system. This is to ensure system security and reliability at all times. The proposed modification to the Transmission Code is to ensure that there are sufficient generation capacities available in the system to meet demand and ensure system security and reliability at all times. The requirement to stock one set of spare air filters for each combined cycle plant

	combined cycle plant is also contrary to the intent of the first paragraph which states that the Generation Licensee shall ensure that it has sufficient inventory of critical spares. The basis of the required inventory level for air filter is not explained. The reasons stated for the proposed new clause 9.2.5 is too general for such a specific and prescriptive requirement. Maintaining one complete set of spare air filter on-site for each combined cycle plant at all times is an unreasonable requirement, given our past records of replacement of air filters at an interval of 12 months. Such requirement of high inventory level for air filters for combined cycle plants would result in cost inefficiencies among the generators introduced by the Regulator.	or gas turbine at all times is necessary to cater for all operational conditions.
YTL PowerSeraya	There is no need for EMA to amend the Transmission Code to mandate the keeping of critical spares by generation licensees. Sufficient commercial incentives are already present to incentivise generation licensees to keep appropriate stocks of critical spares. With respect to spare air filters, some are washable and there therefore is no real need to keep spares for those. If EMA insists on mandating the keeping of critical spares then the keeping of critical spares should be in accordance with the practices of a	EMA holds the view that Generation Licensees must maintain sufficient inventory of critical spares for timely replacement such that their generation facilities can be returned to service in the shortest possible time. The proposed modification to the Transmission Code is to ensure that there are sufficient generation capacities available in the system to meet demand and ensure system security and reliability at all times. The requirement to stock one set of spare air filters for each combined cycle plant (CCP) or gas turbine at all times is necessary to cater for all operational conditions.

	Reasonable and Prudent Operator and in line with normal industry practices instead of the proposed section 9.2.5 of the Transmission Code. It is not the normal industry practice to keep critical spares to cover all contingencies. Doing so in accordance with the proposed section 9.2.5 of the Transmission Code would be very costly, pushing up electricity prices and would require a significant upward adjustment to the Vesting Price. This would not be in the interests of consumers.	While washing of air filters could temporarily prolong the operation of a CCP before the air filters are replaced, keeping a set of spare air filters for each CCP is still necessary due to the long lead time for delivery of new air filters.