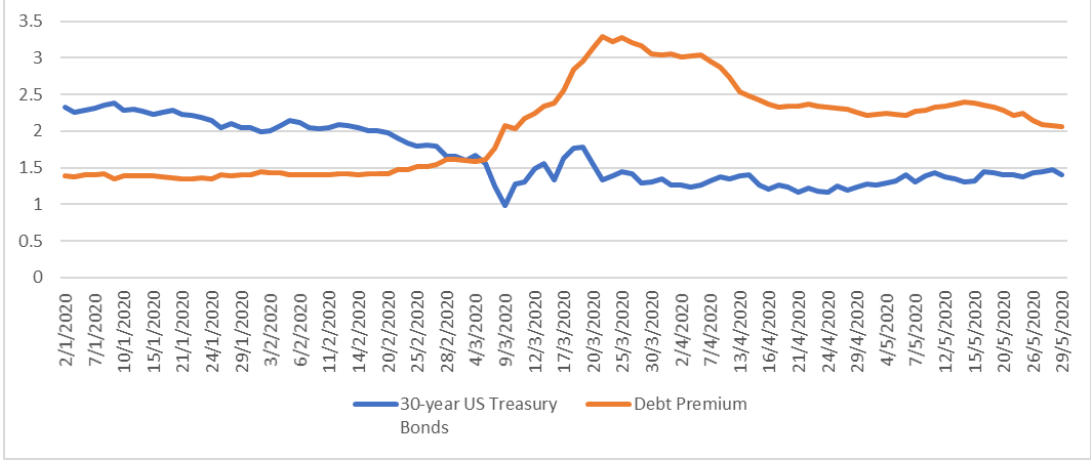


RESPONSE TO INDUSTRY COMMENTS ON THE DRAFT DETERMINATION PAPER DATED 21ST OCTOBER 2020

FINANCIAL PARAMETERS

S/no	Reference	Industry comments	KPMG response
1	Risk Free Rate (Section 2.4 of EMA Draft Determination Paper and Section 2.5 of Review of Vesting Contract Financial Parameters)		
1a.	Keppel Energy Pte Ltd	Given that the EMA will hold all other financial and technical parameters in Table 2 and Table 3 respectively that are not covered under section 5 to be constant till the expiry of the Vesting Contracts on 30 Jun 2023, we seek EMA's consideration to deviate from the existing reference period (i.e. data from Mar 2020 to May 2020) to the period from Jan 2020 to May 2020 for the following reasons: - While Singapore's major banks have surveyed noted interest rate expectations for 2021, by using data from Mar 2020 to May 2020 which averaged to 1.46%, it is assumed that that the low interest environment will persist into 2022 and 2023. The situation remains highly uncertain given the COVID-19 pandemic is an unprecedented event and the global economy is reliant on the development and distribution of a vaccine. - By referencing to data from Jan 2020 to May 2020, the average risk free rate will be 1.65% as 40% of the data is based on the economy situation prior to the impact of COVID-19. This assumption implies that 2022 interest rate remain muted in 2022 but recover in 2023. We believe this is a more moderated view of the economy as the former may be too pessimistic. 	We acknowledge that there is a significant degree of uncertainty that has been created by the COVID-19 global pandemic. As noted in our prior feedback, we have considered current trends in SGS, as well as forward-looking estimates, in determining the suitability of the Base Month. Average SGS yields on the benchmark instrument (NA16100H) have continued to remain low. Additionally, recent market research in October 2020 from a leading Singaporean bank indicates that their forecast for 30Y SGS Yields (the underlying benchmark for the risk-free rate of these Financial Parameters) through to 2022 remains below the risk-free rate provided in the Draft Determination Paper. We also note that considering a change in the averaging period for the risk-free rate must also be applied across all relevant factors for consistency. For example, this would include the debt premium and market risk premium. Given that market impacts from a global pandemic would be systemic, it would not be appropriate for one item to be altered when others are held constant.

S/no	Reference	Industry comments	KPMG response
			On this basis, and the rationale provided in the Final Report, the Base Month has been retained as May 2020 with a three-month averaging period.
2	Debt Premium (Section 2.5 of EMA Draft Determination Paper)		
2a.	Senoko Energy Pte Ltd	As raised in our comments on the vesting consultation paper published back in July 2020, we have highlighted that the financial standing of <u>Gencos in Singapore has deteriorated to a level below the investment grade benchmark</u> of a Baa equivalent rating. Utilising the numbers found in the respective annual financial statements of various Gencos, we computed the equivalent ratings based on the published benchmarks and found that: - 2014 onwards, Gencos' financial ratings fell from a Baa rating to a Ba rating equivalent. - 2018/19, Gencos' ratings worsened from a Ba rating to a Ca rating equivalent The proposed methodology to derive DP might not be fit for purpose in the current climate Gencos in Singapore are operating in. Hence, we are suggesting the adoption of a lower rated index (Ca rated, etc.) as a comparator against the US government 30-year bond. This will equate to a higher DP which is more representative of the market conditions.	The Vesting Contract Procedures provide that the Financial Parameters should represent a theoretical new entrant to the Singapore power market. As a theoretical entrant, they are a benchmark entity and not one that has been present during past market conditions. As noted in our responses to feedback on the Consultation Paper, several banks active in the Singapore power market provided quotes for a debt premium for a theoretical new entrant. This provides a 'sense check' to the selected benchmark. We note that the calculated cost of debt under this project finance method was largely consistent with the cost of debt adopted for the Draft Determination Paper.

S/no	Reference	Industry comments	KPMG response														
3	MAS Core Inflation Index (Section 2.4 of Review of Vesting Contract Financial Parameters)																
3a.	Keppel Energy Pte Ltd	In line with our comments on risk free rate, we seek EMA's consideration to deviate from the existing reference period (i.e. data from Mar 2020 to May 2020) to the period from Jan 2020 to May 2020. As such, the average MAS Core Inflation Index will be -0.04%. <table><tr><th>Period</th><th>MAS Core Inflation Index value Year-on-year growth (%)</th></tr><tr><td>Jan-20</td><td>0.32%</td></tr><tr><td>Feb-20</td><td>0.07%</td></tr><tr><td>Mar-20</td><td>- 0.16%</td></tr><tr><td>Apr-20</td><td>-0.26%</td></tr><tr><td>May-20</td><td>-0.18%</td></tr><tr><td>Average</td><td>-0.04%</td></tr></table>	Period	MAS Core Inflation Index value Year-on-year growth (%)	Jan-20	0.32%	Feb-20	0.07%	Mar-20	- 0.16%	Apr-20	-0.26%	May-20	-0.18%	Average	-0.04%	Please refer to the response to Question 1a above.
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TECHNICAL PARAMETERS

S/no	Reference	Industry comments	WSP response
1	Average Expected Utilisation Factor (Section 3.8 of EMA Draft Determination Paper)		
1a.	Keppel Energy Pte Ltd	There has been a substantial drop in system demand following the implementation of Circuit Breaker (CB) in Apr 2020. The system wide electricity demand has yet to recover and is currently 2.8% and 4% lower than pre-CB levels during weekdays and weekends, respectively. Given the view that the economy situation may persist into 2021, we could expect the depressed power demand to at least extend to 2021. As such, it would be inaccurate to rely on the historic 12-months' (Jun 19 - May 20) capacity factor as a forecast for 2021/2022. We suggest for the Consultant utilize a lower plant load plant factor than 61.8%. These could be done in two ways: - Incorporate a downwards adjustment based on a correlation to the projection decrease in system demand in 2021 to 2023 - Take reference from Jun19 to the month prior to publication of the final determination paper. Based on our analysis, the average plant load factor from Jun 19 to Sep 20 is below 61.3%. The figure from either methodology as suggested above should be further adjusted for the effects of additional supply from TuasOne, solar growth and energy import in the next 3 years.	EMA will retain the 12-month reference period, i.e., Jun 2019 to May 2020, given that it has accounted for the months affected by COVID-19. EMA has considered the following factors when computing the average expected utilisation factor taking into consideration the following factors: (i) The actual performance of existing F-class CCGTs in operation over the period from June 2019 to May 2020; (ii) The additional supply from TuasOne; (iii) Expected generation output from solar, and (iv) Expected electricity imports. EMA is unable to provide the calculations as the information used to derive the average expected utilisation factor is commercially sensitive. However, EMA notes that the generation capacity is achievable over the vesting period based on the actual performance of existing F-class CCGTs in operation over the period Jun 2019 to May 2020, and this is after factoring in the impact of COVID-19 on projected electricity demand.

S/no	Reference	Industry comments	WSP response																																																																																				
1b.	YTL PowerSeraya Pte. Limited	It is stated in the Draft Determination Paper that the PLF of 61.8% is based on the actual performance of existing F-class CCGTs in operation over the period June 2019 to May 2020. However, in Section 7 of the response to the industry feedback, it is stated that the 61.8% has also taken into account (i) additional supply from TuasOne, (ii) expected generation from solar and (iii) expected electricity imports. We would like to seek confirmation that the PLF of 61.8% has taken into account the additional supply from TuasOne, expected generation from solar and expected electricity import. If yes, we would like to request EMA to provide the details on how the adjustments was made to arrive at 61.8% starting from the actual performance of existing F-class CCGTs in operation over the period June 2019 to May 2020. Based on the historical Average System Demand published in the EMC Monthly Trading Report, we observed that the average system demand for Jun - Aug 20 vs Jun - Aug 19 is on average 274 MW lower. <table><tr><th></th><th>Average System Demand</th><th></th><th>Average System Demand</th><th></th><th>Difference</th></tr><tr><td>Jun-19</td><td>6,025</td><td>Jun-20</td><td>5,776</td><td></td><td>-249</td></tr><tr><td>Jul-19</td><td>6,131</td><td>Jul-20</td><td>5,804</td><td></td><td>-327</td></tr><tr><td>Aug-19</td><td>6,161</td><td>Aug-20</td><td>5,916</td><td></td><td>-245</td></tr><tr><td>Sep-19</td><td>6,196</td><td></td><td></td><td></td><td></td></tr><tr><td>Oct-19</td><td>5,996</td><td></td><td></td><td></td><td></td></tr><tr><td>Nov-19</td><td>5,966</td><td></td><td></td><td></td><td></td></tr><tr><td>Dec-19</td><td>5,792</td><td></td><td></td><td></td><td></td></tr><tr><td>Jan-20</td><td>5,929</td><td></td><td></td><td></td><td></td></tr><tr><td>Feb-20</td><td>6,011</td><td></td><td></td><td></td><td></td></tr><tr><td>Mar-20</td><td>6,089</td><td></td><td></td><td></td><td></td></tr><tr><td>Apr-20</td><td>5,709</td><td></td><td></td><td></td><td></td></tr><tr><td>May-20</td><td>5,650</td><td></td><td></td><td></td><td></td></tr><tr><td>Average</td><td>5,971</td><td>Average</td><td>5,832</td><td>Average</td><td>-274</td></tr></table> As such, we would like to request EMA to consider making further adjustment to the actual PLF achieved historically to account for the expected lower system demand.		Average System Demand		Average System Demand		Difference	Jun-19	6,025	Jun-20	5,776		-249	Jul-19	6,131	Jul-20	5,804		-327	Aug-19	6,161	Aug-20	5,916		-245	Sep-19	6,196					Oct-19	5,996					Nov-19	5,966					Dec-19	5,792					Jan-20	5,929					Feb-20	6,011					Mar-20	6,089					Apr-20	5,709					May-20	5,650					Average	5,971	Average	5,832	Average	-274	Refer the response in point 1a.
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S/no	Reference	Industry comments	WSP response
2	Fixed Annual Running Costs (Section 3.10.1 of EMA Draft Determination Paper and Section 4.1.6 of Review of vesting contract technical parameters)		
2a.	Keppel Energy Pte Ltd	With the recent bankruptcy filing by Hin Leong Trading, there is one less supplier for providing emergency fuel. From our understanding of the market, affected downstream users seeking for interim replacement trucked back-up fuel contract are facing up to two times the cost of their original arrangement with Hin Leong. In the longer run, the replacement piped back-up fuel contract will have to incur additional connection cost. We seek EMA/Consultant to incorporate the increased cost.	We have observed that most of the Gencos are not affected by the bankruptcy of Hin Leong Trading and that those affected are the result of commercial decisions to maintain minimum fuel oil storage in the generating plant boundary. This does not reflect the conditions faced by an efficient new entrant.
3	Build Duration (Section 5.1 of Review of vesting contract technical parameters)		
3a.	Keppel Energy Pte Ltd	We are concerned that the Consultant is only taking reference to one source (i.e. WSP) on the loss in productivity. Besides, we disagree that loss in productivity will only result in 45-day delay for the construction of a new CCGT based on the following reasons: • Based on our experience of executing existing simpler and smaller scale infrastructure projects, we are already experiencing 6 to 9 months of delay. Based on Straits Times news in mid Jul 2020, some new Build-To-Order (BTO) flats are facing delay of up to 9 months, a revision of an earlier estimate of 6 months. Given power plant construction is more complex to carry out, a 45-day delay is overly optimistic. • Build duration should not only account for delays are not only due to new BCA regulations related constructions industries but also disruption in the delivery of specialized equipment, machinery and construction materials from overseas. This is especially true for construction of a new CCGT involves (i) bringing in overseas specialized manpower to oversee critical work processes as well as (ii) shipping of specialized machineries and equipment like turbines rotor from abroad. As such, we propose the build duration of a new CCGT to be at least 36 months and any revision of build duration should also lead to upward cost adjustment for the capital cost of plant.	We have consulted major CCGT OEMs and considered available information from other projects in Singapore to determine that the estimated additional build duration of 45 days is reasonable.

S/no	Reference	Industry comments	WSP response
4	Proposed Approach to Update Capital Costs Parameters in 2022 for 2023 (Section 5.2a. of EMA Draft Determination Paper)		
4a.	Senoko Energy Pte Ltd	While we note EMA's view on the current oversupply of capacity for the manufacturing of CCGT plants, we do not agree that "Capital cost of the plant" should remain static for years 2021 - 2023. As central banks around the world are spurring on their economies through unprecedented fiscal stimulus packages, inflation will likely be on the rise. Keeping "Capital cost of the plant" constant would likely mean that in <u>real dollar terms</u>, it will be reduced by the inflation rates for 2021 - 2023. Hence, we are proposing for EMA to escalate item 7 by the inflation rate.	There is no escalation considered for the cost of specialised equipment and other equipment in view of the oversupply of capacity for manufacturing CCGT plants, and that there is no indication that the demand for large CCGT plants would increase in the next few years.

OTHERS

S/no	Reference	Industry comments	EMA response
1	General Comments		
1a.	PacificLight Power Pte Ltd	PLP are supportive and have no further comments on the proposed parameters outlined in the Draft Determination Paper. However, one key point we would like to highlight is the relative importance of vesting price parameters given they will be used for the initial auctions under the proposed FCM, notably with respect to calculation of Gross CONE. As currently defined Gross CONE will only include the fixed component of O&M costs. One of the main objectives of the FCM is to ensure resource adequacy by providing adequate incentives to both existing and new resources to maintain generating units at high levels of reliability. To achieve this, the calculation of Gross CONE should take into account all of the O&M costs. We would therefore request the EMA to reclassify LTSA costs in the Vesting calculation such that from 2021 onwards it is categorised as a fixed cost for it to be included in the Gross Cone calculation. It should be noted that LTSA was treated as a fixed annual running cost up until 2010 mid-term vesting review, before it was reclassified as a variable cost since the 2011-2012 review.	It was determined in the 2011-2012 review that LTSA would be sought for the first one to two overhaul cycles of the gas turbine plant (typically 6 to 12 years). These are typically structured on a “per operating hour” or “per MWh” basis and hence are largely variable costs. In addition, we note that most OEMs are proposing to receive the LTSA payment based on the electricity generation to ensure smooth cashflow payment for the Gencos. In this regard, it remains appropriate to consider the LTSA costs under variable O&M costs. Regarding the inclusion of LTSA cost in the calculation of Gross Cone, this would be separately reviewed under EMA’s ongoing development of the Forward Capacity Market.