



Smart Energy, Sustainable Future

**CAPITAL COST PARAMETERS FOR
SETTING THE VESTING CONTRACT PRICE FOR 2020**

INFORMATION PAPER

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1. INTRODUCTION

1.1. The Energy Market Authority (“EMA”) implemented vesting contracts on 1 Jan 2004. The objective of the vesting regime is to enhance economic efficiency in the electricity market by mitigating the exercise of market power by the generation companies (“gencos”). The vesting contracts mandate a specified amount of electricity (viz. the vesting contract level) to be hedged at a specified price (viz. the vesting contract price). This removes the incentives for gencos to withhold their generation capacity to sustain inefficient spot prices in the wholesale electricity market.

1.2. The vesting contract price is set based on the long run marginal cost (“LRMC”) of the most efficient generation technology that accounts for at least 25% of the system demand in Singapore. The most efficient technology at present is the F-class combined cycle gas turbine (“CCGT”). EMA reviews and determines the vesting contract price parameters biennially or when necessary in accordance with the published *EMA’s Procedures for Calculating the Components of the Vesting Contracts* (“Procedures”).

1.3. In November 2018, EMA issued the Final Determination Paper on the 2019 and 2020 vesting contract price, including the escalation factors as set out in **Appendix 1** to update in 2019 the capital cost parameters for setting the vesting contract price for 2020.

2. INDICATIVE CAPITAL COST PARAMETERS FOR 2020

2.1. **Table 1** provides the indicative escalation factors which will be used to update the capital cost parameters for 2020. The indicative escalation factors are based on published information as of 15 Nov 2019.

Table 1: Indicative Escalation Factors to Update the Capital Cost Parameters for 2020

Escalation Factors	2018	2019	Remarks
Generation Connection Cost	-	-	There has been no change to the Transmission Service Rate Schedule (“TSRS”) published by SP PowerAssets Limited (“SPPA”).
Industrial Property Price Index	90.0	89.9	Based on the Q3 2019 Quarterly Market Report published by the Jurong Town Corporation (“JTC”). Computed based on the average of available quarterly indices for the calendar year.
Mid-point of projected MAS Core Inflation	N.A.	1.0%	Based on the Sep 2019 Consumer Price Developments Report published by the Monetary Authority of Singapore (“MAS”).
Tender Price Index	98.6	99.7	Published by the Building and Construction Authority (“BCA”). Computed based on the average of available quarterly indices for the calendar year.

2.2. **Table 2** summarises the indicative capital cost parameters for 2020 based on the indicative escalation factors in **Table 1**. EMA will (around mid-Dec 2019) inform the industry of the final capital cost parameters for 2020 based on the latest available escalation factors published as of 1 Dec 2019.¹

Table 2: Indicative Capital Cost Parameters for 2020

Technical Parameters	Current (2019)	Indicative (2020)
Item 7 – Capital cost of the plant (S\$ million)	528.0	531.1
Item 8 – Land, infrastructure and development cost of the plant (S\$ million)	159.0	160.2

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¹ Specifically, for the Industrial Property Price Index and Tender Price Index, if data for the entire calendar year 2019 is not available, the average of available quarterly indices for 2019 will be taken instead.

Escalation Factors for Updating Capital Cost Parameters in 2019 to Set Vesting Contract Price for 2020

Escalation factors to update the capital cost parameters (i.e. item 7 (Capital cost of the plant) and item 8 (Land, infrastructure and development cost of the plant) under Section 2.3 of the Procedures) in 2019 for 2020:

$$\text{Cost of Item 7 for } \underline{2020} = \text{Cost of Item 7 determined by EMA in 2018 for } \underline{2019} \times (47\% \times 1 + 53\% \times TPI)$$

$$\text{Cost of Item 8 for } \underline{2020} = \text{Cost of Item 8 determined by EMA in 2018 for } \underline{2019} \times (15\% \times SP + 10\% \times PPI + 14\% \times TPI + 61\% \times OCI)$$

where:	<i>PPI</i>	is equal to PPI_{2019} / PPI_{2018} ;
	PPI_{2019}	is the “All Industrial” Property Price Index for 2019 (up to the latest month available) published by JTC in year 2019;
	PPI_{2018}	is the “All Industrial” Property Price Index for year 2018 published by JTC in year 2019;
	<i>TPI</i>	is equal to TPI_{2019} / TPI_{2018} ;
	TPI_{2019}	is the Tender Price Index for 2019 (up to the latest month available) published by BCA in year 2019;
	TPI_{2018}	is the Tender Price Index for year 2018 published by BCA in year 2019;
	<i>OCI</i>	is the Overhead Cost Index for 2020 and is equal to $(1 + MASCIR_{2020})$;
	$MASCIR_{2020}$	is the mid-point of the latest available range of projected MAS Core Inflation for 2020 published by MAS in year 2019; and
	<i>SP</i>	is the percentage change (if any) in generation connection cost determined in accordance with the

prevailing TSRS published by SPPA, relative to such cost determined by EMA in 2018 for 2019.

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