

PRICE QUALITY METHOD (PQM)

Effective for tenders called on and after 1 February 2023

AMENDMENT LIST

Section	Details of Amendment	Date of Amendment
Section 4.2	<p>Updated the changes to the Quality (Q) Component in this section</p> <p>a) Removed the Constructability Score (CS) Index;</p> <p>b) Reallocated the affected weightage of 8% (from CS Index) to the Q component to allow GPEs higher weightage in assessing Integrated Planning & Design (IPD) and Advanced Manufacturing & Assembly (AMA) related quality attributes under the Quality proposals</p> <p>Updated the weightages of the Quality attributes.</p>	1 February 2023
Annex A	Updated the examples on the scoring of the PQM score.	
Annex B	Removed the FAQ 1 & 2 on the Constructability Score (CS) Index	
Section 1.1	<p>Changed the term “<i>Estimated Procurement Value (EPV)</i>” to “<i>Estimated Construction Cost (without contingency sum)</i>”. The estimated construction cost (without contingency sum) is more indicative of the scope of the work to be carried out by the contractors.</p>	1 October 2022
Annex C	Added the guideline on the MOM’s Safety Disqualification Framework	
Section 3.1	Removed the Productivity (PD) component and updated the weightages in the table.	1 June 2022
Section 3 & 4	<p>Updated the changes to the Productivity (PD) & Quality (Q) Component in these sections.</p> <p>c) Retain the 8% allocated to the Constructability Score (C-score) Index and move the C-score Index to the Q component;</p> <p>d) Remove the Technology Adoption (TA(C)) Index and the Workforce Development (WD(C)) Index;</p> <p>e) Reallocate the affected weightage of 2% (from TA(C) & WD(C) Index) to the Q component to allow GPEs higher weightage in assessing other project related attributes under the Quality proposals</p> <p>Updated the weightages of the Quality attributes.</p>	
Annex A	Updated the examples on the scoring of the PQM score.	
Annex B	Updated the existing FAQs.	

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1.0 INTRODUCTION TO PQM

- 1.1 The Price-Quality Method (PQM) framework applies to all public sector construction tenders under the BCA Construction Workheads (CW01 & CW02) with an Estimated Construction Cost (without contingency sum) of \$3million and above.
- 1.2 The aim of PQM is to provide a structured framework for non-price criteria to be assessed alongside price. In effect, PQM translates the qualitative attributes into quantitative scores which, when combined with the Price scores, will enable the most suitable firm that provides the best offer to be selected for award.

2.0 KEY PRINCIPLES OF PQM

- 2.1 Value for Money. Both Price and Quality attributes will be given weightages ⁽¹⁾ and scored based on the guideline provided. The bid with the highest combined Price-Quality score (i.e. PQM score) will be awarded the project.
- 2.2 Open and Transparent.
- a. The PQM procedures will be open and transparent. The weightages among Price and Quality components, the Quality attributes, the number of points assigned to each attribute and the method of scoring will be made known upfront in the tender.
 - b. All tenderers can request in writing for their individual tender performance after the tender award.

3.0 MAIN FEATURES OF PQM

- 3.1 Weightages for PQM. The following range of weightages can be considered, depending on project requirements such as the complexity of the project, and the extent of design input required from the tenderers.

Component	Weightages for Building tenders ⁽²⁾	Weightages for Civil Engineering tenders ⁽³⁾
Price	40% - 60%	50% - 70%
Quality	60% - 40%, correspondingly	50% - 30%, correspondingly

¹ Please refer to section 3.1 for weightage configurations for PQM.

² These refer to building projects classified under Contractors Registration System (CRS) Workhead CW01.

³ These refer to civil engineering projects classified under CRS Workhead CW02.


3.2 Tender Submissions. The Government Procuring Entities (GPEs) can adopt the one-envelope or the two-envelope system. A one-envelope system can be adopted for projects whereby the scoring of the specified quality attributes is based on quantified templates with no subjective judgment. An example of an objective scoring for quality attributes would be safety performance based on MOM's List of Contractors with Demerit Points. Otherwise, a two-envelope system will be adopted.

3.2.1 One-envelope System. Tenderers submit the Price and Quality together in one envelope. The Price and Quality scores will be computed at the same time.

3.2.2 Two-envelope System. Tenderers submit the Quality envelope separately from the Price envelope. GPEs would open and compute the Quality score first, before opening the Price envelope and computing the combined scores. The tenderer with the best combined score will be awarded the contract.

4.0 SCORING METHODOLOGY

4.1 Price Component

4.1.1  "Price" Score Computation. The lowest tender price will be given the maximum Price-score (P-score). GPEs reserve the right not to consider any tender bid that is abnormally low. The Price scores of the other tenderers will be inversely proportional to the lowest tender price. The formula below will be used to compute the P-score.

$$\text{Price Score (P-score)} = \frac{\text{Lowest tender price}}{\text{Tenderer's price}} \times \text{Price weightage}$$

4.1.2 If price loading is applicable under Bonus Scheme of Construction Quality (BSCQ), the new price (loaded according to the Total Price Loading Factor) will be used for computing the P-score.

4.1.3 When computing the P-score, the tenderer's price should not include provisional sums and value of nominated subcontracts.

4.1.4 Any alternative bid, by any of the firm, will be treated as a separate bid and be assessed accordingly, provided alternatives are allowed. Alternative bids are offers which functionally meet the specified technical specifications and/or terms and conditions differing from those set out in the Invitation to Tender.

4.2 Quality Component

4.2.1 The Quality score will be derived from the summation of past performance, safety performance and GPEs' own quality attributes:

Quality score (Q-score) =	Past Performance	+	Safety Performance	+	GPEs' Own Quality Attributes
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4.2.2 Attributes under the Quality component will include:

- a) Mandatory attribute: Past Performance. This could include performance in past or ongoing projects in areas such as timeliness and quality (based on C41 reports and/or GPEs' in-house performance assessment system). To recognise contractors which have provided quality work in past projects, the past performance ⁽⁴⁾ is a mandatory attribute. Please refer to Clause 4.2.3 for the minimum weightage.
- b) Mandatory attribute: Safety Performance. This could include safety performance based on the Ministry of Manpower (MOM) Safety Demerit Point System, GPEs' in-house safety performance score or records. To give due emphasis to site safety, the safety performance is a mandatory attribute. Please refer to Clause 4.2.3 for the minimum weightage.
- c) GPEs' own Quality attributes, for example:
 - i. Relevant track records of tenderer or specific competencies that enhances the tenderer's suitability for the project;
 - ii. Project Specific Proposals including work methods and resources assigned to the project; and
 - iii. Awards or other attributes, if any.
 - iv. Contractors' productivity efforts where technical proposals are sought as part of tender evaluation
 - v. Relevant key transformation areas under the Built Environment Industry Transformation Map (BE ITM) e.g. Integrated Planning & Design (IPD) and Advanced Manufacturing & Assembly (AMA) related quality attributes

⁴ Contractors can view their individual performance score under the electronic Builders and Contractors Registration System (eBACS).

4.2.3 The range of the weightages of the quality attributes are shown in Table 4.2.3a.

Table 4.2.3a: Range of weightages

% of Overall PQM Score				
		Building		
		Civil Engineering (CE)		
Price weightage	70% (No change)	60% (No change)	50% (No change)	40% (No change)
Quality Weightage	30%	40%	50%	60%
Safety Performance	Min. 3.0% ⁽¹⁾ (No Change)	Min. 4.5% ⁽²⁾ (No Change)	Min. 6.0% ⁽³⁾ (No Change)	Min. 7.5% ⁽⁴⁾ (No Change)
Past Performance	Min. 3.0% ⁽¹⁾ (No Change)	Min. 4.5% ⁽²⁾ (No Change)	Min. 6.0% ⁽³⁾ (No Change)	Min. 7.5% ⁽⁴⁾ (No Change)
GPEs' own quality attribute	Max 24%	Max 31%	Max 38%	Max 45%

Notes:

S/N	Original ratio of Price: Productivity: Quality	Both safety and past performance will remain at minimum 15% of the original quality percentage
1	70%: 10%: 20%	15% of 20% = 3.0%
2	60%: 10%: 30%	15% of 30% = 4.5%
3	50%: 10%: 40%	15% of 40% = 6.0%
4	40%: 10%: 50%	15% of 50% = 7.5%

4.2.4 GPEs will decide which attributes are relevant for a particular project and assign the maximum points for each quality attribute.

4.2.5 GPEs will set out the scoring method for the specific Quality attribute selected. The scoring method can adopt any of the following approaches.

a. Benchmark performance method

A benchmark performance level may be determined for a particular attribute. The benchmark performance level for this attribute can be set at 50% to 100% of the Quality points depending on how the agency wishes to treat tenderers that do better or worse than the benchmark level:

- i) For example, the benchmark performance can be set at 70% of the Quality points, and tenderers which fare worse or better can

score lower or higher according to their relative performance. Alternatively, firms which fare worse can be given no points.

- ii) The benchmark performance can be set at 100% of the quality points and tenderers which do worse can score less or no points.

Illustration

For assessing quality performance based on CONQUAS scores, the benchmark performance level is set at 3 projects achieving CONQUAS score 80 points or above within the past 3 years.

If method ii) above is chosen, and the maximum points for this attribute is 10 points, tenderers having 3 or more projects achieving CONQUAS score 80 points or above within the past 3 years will all get 10 points, while those which do not meet the requirement may get less points or no points.

b. Ranking method


For some attributes such as the project specific proposal, it may be difficult to set a benchmark performance level. For such attributes, GPEs can rank the tenderers according to the relative merits of their proposals and allocate Quality points based on the ranking.

c. Banding method

Banding method is similar to benchmark performance method but the scoring is based on bands rather than with reference to a fixed benchmark. When using this method, GPEs will have to decide the range and allocated score for each band depending on how the agency wishes to treat tenderers that fall into each band.

d. Raw score method

For quality attributes such as the project specific proposal in which there will be subjective assessment involved and the scoring is based on a list of sub-attributes which describes how points will be assigned to each area of the proposal, GPEs could give any score from 0 to the maximum score assigned for the sub-attribute to the tenderer based on the extent to which the tenderer has met the specific evaluation criterion. If any specific evaluation criterion involves subjective assessment, e.g. project specific proposals, a two-envelope system will be adopted.

- 4.2.6  Quality Score Computation. The tenderer with the highest total raw quality points will be given maximum Quality score. The Quality score of the other tenderers will be calculated proportionally to the highest total Quality points. The formula below will be used to compute the Quality-score (Q-score).

$$\text{Quality score (Q-score)} = \frac{\text{Tenderer's total Quality Points}}{\text{Highest total Quality Points}} \times \text{Quality Weightage}$$

4.2.7 Optional Requirements. GPEs may choose to adopt **any** of the following optional requirements:

- a. Set a specific Quality attribute as a minimum qualifying criterion, which must be stipulated upfront in the tender documents so that potential tenderers which do not meet this criterion need not tender. This is to minimise the wastages in the firms' tendering efforts. If any GPE intends to specify track record as a minimum qualifying criterion, it should not be overly onerous such that it limits the number of eligible tenderers unnecessarily; or
- b. Set a minimum total Quality points for tenderers to meet. Tenders which do not meet the minimum total Quality points will be 'disqualified' and their Price scores will not be computed. If the two-envelope system is used, the Price envelopes from the non-conforming tenders should not be opened.

5.0 INFORMATION REQUIRED IN TENDER DOCUMENTS

5.1 The following items must be clearly made known at tender stage:

- a) Price-Quality weightage
- b) Quality attributes applicable and their assigned maximum points
- c) Scoring method for each attribute e.g. benchmark performance method or ranking method, etc. Benchmarks used in the benchmark performance method must be made known, together with how tenderers which perform better or worse than the benchmark will be scored.
- d) (if applicable) Any minimum qualifying criterion for a specific quality attribute, which, if not met, would disqualify the tenderer.
- e) (if applicable) Any minimum total quality points below which tenderers will not be further considered.

PRICE QUALITY METHOD

Annex

Enclosed Annexes

- Annex A – Illustration of Scoring Methodology
- Annex B – Frequently Asked Questions (FAQs)
- Annex C – MOM's Safety Disqualification Framework

Annex A – Illustration of Scoring Methodology

Case Example 1 – Scoring of Tender

PQM Configuration: Price: Quality = 60% : 40%

		Tenderer A	Tenderer B	Tenderer C	Tenderer D	Tenderer E
Quality	Q (other attributes) (upon 100)	82.0	96.2	73.6	59.8	78.6
	Total Q-score (40pts)	34.10	40.00	30.60	24.86	32.68
Price	Tender Sum (M\$)	12.5	13.0	11.7	12.0	13.5
	P-score (60pts)	56.16	54.00	60.00	58.50	52.00
Total PQM score (Q-score + P-score) (100pts)		90.26	94.00	90.60	83.36	84.68
Overall position		3	1	2	5	4

Annex B – Frequently Asked Questions (FAQs)

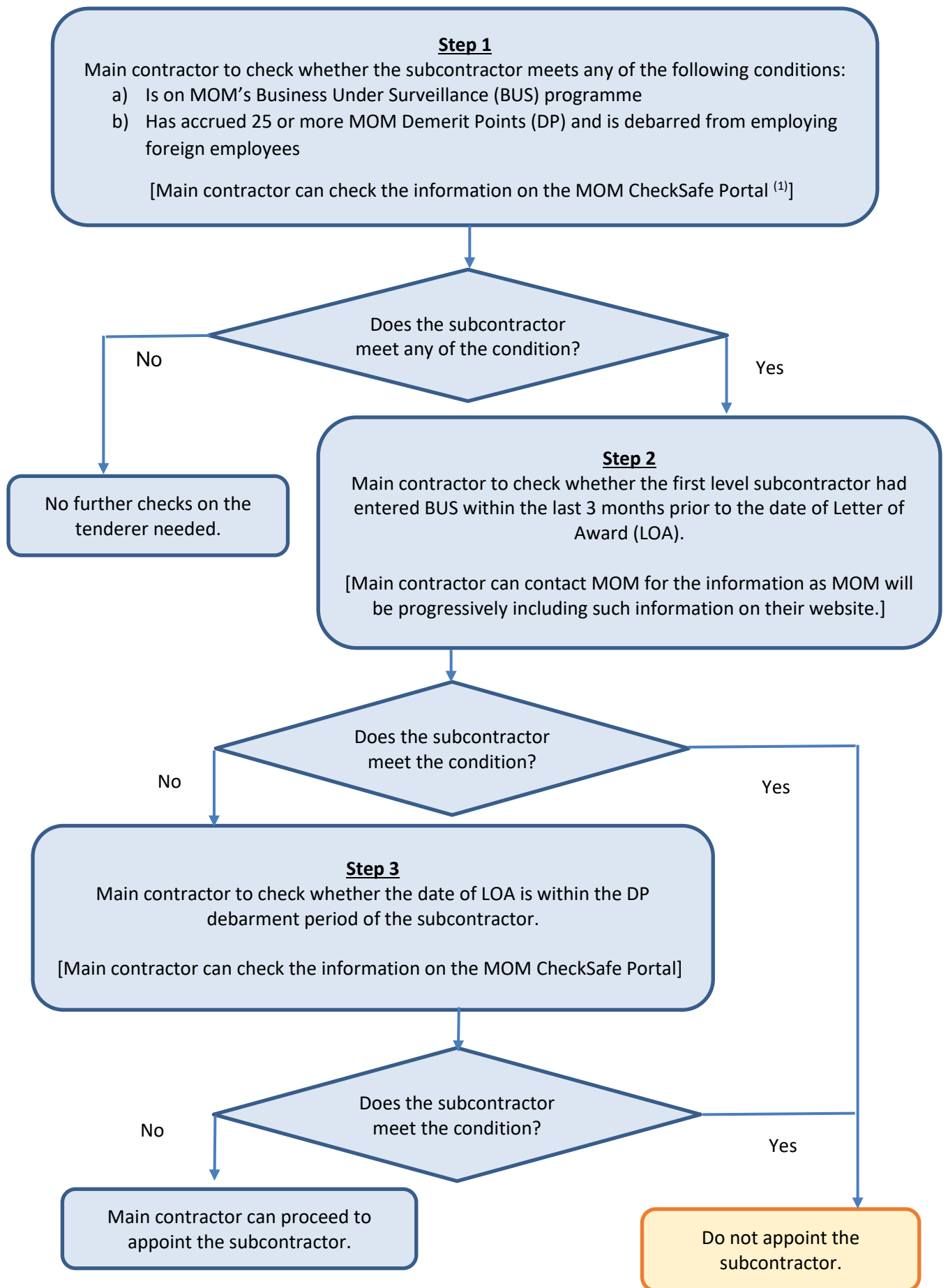
Q1. Can tenderers know how they fare in their tender?

A1. To provide greater transparency on tenderers' performance so that tenderers can improve the quality of their future bids, tenderers which wish to seek feedback on their tender performance after tender award can write to the agency that calls the tender for clarifications. We seek contractors' understanding that such feedback from agencies should be taken positively for improving future tender performance.

Annex C – MOM’s Safety Disqualification Framework

Checks to be Carried Out by the Awarded Tenderer (or Main Contractor) on the Safety Disqualification Criteria

The Awarded Tenderer (or Main Contractor) should carry out checks on whether the first level subcontractors meet the Safety Disqualification Criteria before appointing them:



Notes:

- 1) Main contractor can obtain the information on BUS and DP on the CheckSafe Portal, as shown below.

Contractor ABC Pte Ltd Edit

Results

Filters						
Company name and UEN	* Fatal cases	W/C P cases	Demerit points	Under SWO	Under BUS	
Contractor ABC Pte	0	8	50	No	Yes	
DP debarment phase and period	SWO type and status	SWO issuance / lifting date	Convicted date and offences	bizSAFE type and level		
2(14-Jul-22 to 14-Jan-23)	Full SWO (Lifted)	09-Apr-21 / 29-Apr-21	-	bizSAFE PARTNER ,bizSAFE ENTERPRISE Level Star		

* The number of fatal cases displayed is based on records from past one year
Note: Information provided in this listing is accurate as at 04 Aug 2022.

Under this field, Main contractor will be able to check the DP debarment period of a firm (In this case, 14 Jul 2022 is the date that Contractor ABC first accrued 50 DP and the debarment period is from 14 Jul 2022 to 14 Jan 2023.)

Under this field, Main contractor will be able to check the DP that a firm accrued (In this case, Contractor ABC has accrued 50 DP)

Under this field, Main contractor will be able to check whether a firm is under BUS Program (In this case, Contractor ABC is under BUS)



Building and Construction Authority
Procurement Policies Department
Email: bca_ppd@bca.gov.sg

PRICE QUALITY METHOD FRAMEWORK (PQM)
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