

Drainage Services Department
Technical Circular No. 2/2017

Project Estimates, Pre-tender Estimates and
Impossibility/Unforeseen Ground Conditions/Utility Interference

Introduction

1. In order to enhance the accuracy of project estimates (PE), a Committee was established in 1993 to examine the PE for inclusion in PWSC papers. As from 2001, the Committee also examined pre-tender estimates (PTE) of all capital works contracts with sums exceeding \$20M before tender invitation. In response to the Environment, Transport and Works Bureau (ETWB) Technical Circular (Works) No. 17/2004¹ “Impossibility/ Unforeseen Ground Conditions/Utility Interference” issued on 1 June 2004, the scope of the Committee was further expanded to cover the review of the design and the method of measurement for contracts costing \$100M or above and to ensure that guidelines in risk management for unforeseen ground conditions have been observed in carrying out the design and preparing the tender documents of such contracts before proceeding to tender invitation. The Committee was also renamed as **Committee to Assess Risks and Estimate (CARE)**.

2. Apart from civil engineering works contracts, DSD is also awarding many electrical and mechanical (E&M) works contracts. The **Committee to Assess Risks and Estimates for E&M Works Contracts (CAREEM)** was established in 2007 for examining the PTE of capital E&M works contracts and the original CARE was further renamed as **Committee to Assess Risks and Estimates (Civil) (CAREC)**. It was decided that if E&M

works is to be let under a combined E&M and civil engineering works contract, the PTE will be examined by CAREC.

Effective Date

3. This circular takes immediate effect.

Scope and Effects on existing circulars

4. This circular updates and replaces DSDTC No. 3/2014. It updates the limit of PTE of capital works contracts which requires endorsement by CAREEM before invitation of tenders.

Committees to Assess Risks and Estimate

5. The membership and terms of reference of the CAREC are shown in Appendix A. Endorsement should be sought from CAREC on the following:

- (a) PE before submission of the PWSC paper to the policy bureau, preferably before the finalization of the LegCo panel paper.
- (b) PTE of all capital work contracts of civil engineering works or combined civil engineering and E&M works with an estimated contract sum exceeding \$30M before issuing the memo requesting publication of the gazette notice for invitation to tender.
- (c) A risk management and assessment demonstrating that the guidelines stipulated in ETWB TCW No. 17/2004 have been observed for capital works contracts, including Design and Build Contract, costing \$100M or more.

¹ *ETWB TCW No. 17/2004 stipulates contracts costing \$200M or above to comply.*

- (d) Preliminary project costs and recurrent consequences before submission of Technical Feasibility Statement (TFS) to Works Branch of DEVB.

6. The membership and terms of reference of the CAREEM are shown in Appendix B. Endorsement should be sought from CAREEM on PTE for capital E&M works with an estimated contract sum exceeding \$18M.

Meeting Frequency

7. The CARE meeting is normally held once every two months. The Secretaries of CAREC and CAREEM will prepare their meeting schedules around September each year. Divisions should schedule their submissions and inform the Secretaries of their proposed submission schedule. Submissions should reach all respective CARE Members at least one week before the date of the CARE meeting. If there are important and urgent submissions that cannot fit into the regular schedule, the project engineer should arrange with the Secretary concerned well in advance to see if the date of the meeting can be adjusted or an ad-hoc meeting is required. In case of such ad-hoc meeting or change in meeting date, there may be consequential change to the meeting schedule.

Project Estimates

8. PE should be prepared in accordance with the latest version of Section 5 of Chapter 4 of the Project Administration Handbook (PAH). This should be done by pricing the Bills of Quantities (BQ) or Schedules of Quantities (SQ) on contract basis using the latest contract rates or recent quotations from prospective suppliers. Adequate contingency based on the assessment of risks and uncertainties should be allowed in accordance with the

Works Bureau Technical Circular No. 22/93 – Estimating Using Risk Analysis (ERA) which is subsumed in Appendix 4.15 of Chapter 4 of the PAH. The PE should preferably be approved by CAREC before the finalization of the LegCo panel paper.

9. To facilitate and standardize the CARE submission, the project engineer shall follow the submission guidelines included in the CARE Practice Note No. 1 on the contents and format of the PE Submission and the ERA calculation. The submission should be checked by the Senior Engineer of the project and vetted and signed off by the Chief Engineer. As the CARE Practice Note No. 1 has not been prepared specifically for E&M contracts, the CAREEM may promulgate supplementary practice notes if necessary.

Pre-Tender Estimates

10. PTE should be built-up based on pricing the tender BQ or SQ and should be reviewed and updated with reference to the latest contract rates prior to the invitation of tenders. Reference should be made to the CARE Practice Note No. 1 or relevant practice notes issued by the two CAREs from time to time. Further adjustment to reflect the current market conditions, keen competition in the construction industry and tendering strategy may be necessary. Other than the amount stipulated in the BQ or SQ of the tender documents, contingency should not be included in the PTE.

11. The submission for approval of PTE should be checked by the Senior Engineer of the project and be vetted and signed off by the Chief Engineer. In the memo requesting publication of gazette notice for invitation to tender submitted to the Director, the Chief Engineer should confirm that the PTE has been examined by the CARE concerned.

Review of design and measurement method

12. A sample checklist incorporating the requirements under ETWB TCW No. 17/2004 has been given in Section 5 of the submission guideline under CARE's Practice Note No. 1, but this sample checklist does not mean to be exhaustive and project officers could modify it to suit individual project needs.

Preliminary project estimate in TFS Submission and Recurrent Expenditure

13. The TFS should be prepared in accordance with Section 3 of Chapter 1 of the PAH. A preliminary project estimate at constant prices should be prepared with rough breakdown into categories of design and related services (including consultancy fees and resident site staff cost), site investigation, construction works, energy efficient features and/ or renewable energy technologies, green government buildings and other costs not covered by project main contracts, contract contingencies and project contingencies.

14. Estimate of recurrent consequences at constant prices is required in the submission for inclusion of a project in the Resources Allocation Exercise (RAE) programme. Further adjustment to reflect the current market conditions may be necessary. The estimate shall be prepared in sufficient detail and manner to allow assessment of the full financial implication of the project in the immediate and the long term. The project office shall liaise with those departments/divisions responsible for operation and maintenance for the estimation. The assessment of recurrent consequences shall be prepared in accordance with DSD Departmental Financial & Supplies Circular No. 4/2001.

15. The submission for vetting should include the draft TFS, a completed TFS checklist as requested by DEVB, a breakdown of project

estimate and proforma for assessment of recurrent consequences. It should also include reference information showing the basis and reasonableness of the preliminary cost estimate of major components as stipulated in Financial Circular No. 4/2012. As a general guide, a component should be considered as major if its estimated cost exceeds \$100 million or 25% of the total cost excluding the contingencies, whichever is the less. The information to be provided should be commensurate with the level of project details available at the time of preparation of the TFS. Also, the project office should demonstrate whether the cost estimate would be comparable to similar government projects or the cost estimate would likely be higher than similar government projects with explanation.

Other Requirements

Monitoring of Estimates by Works Branch, DEVB

16. The following information on capital works contracts, including E&M works contracts, shall be sent to Works Branch for the attention of CAS(W)1 under “Restricted (Tender)” cover within 3 working days after the close of tender period or the opening of the fee bid envelopes, whichever is the later, with a copy to Senior Engineer/Headquarters (SE/HQ):

- (a) a summary of the lowest three tenders received together with the relevant sum allowed for the contract in the Approved Project Estimate (APE) and the PTE (names of tenderers shall not be included);
- (b) tender invitation date;
- (c) tender closing date;
- (d) APE of the project and the sum allowed in the APE for the concerned works contract and the date of funding approval;

- (e) the corresponding PWP Item No. and Title;
- (f) Date of preparing PTE;
- (g) post title, name and tel. No. of the Chief Engineer of the project;
and
- (h) post title, name and tel. No. of the project engineer.

17. The Chief Engineer and the project engineer may be required to explain in person to Works Branch on significant difference between the PTE and the tender price received.

Central database of Tender Rates

18. A Contract Rate Database System storing the latest contract rates, including civil and E&M contracts of each works department is available on the HQ Unit portal in the DSD Intranet for downloading.

19. The project engineer should send an electronic copy of the awarded tendered rates of BQ or SQ to SE/HQ within one month of contract award, in accordance with the details and formats issued separately by SE/HQ. After receiving the data, SE/HQ will coordinate the updating of the centralized database so that the updated information could be shared among all works departments.

Enquiries

20. Enquiries on this circular shall be directed to SE/HQ.



(Edwin K H TONG)

Director of Drainage Services

Committee to Assess Risks and Estimates (Civil)
[CAREC]

Membership

Chairman: AD/P&D

Members: CE/CM
CE/PM
CE/DP
CE/SP
SE/CA

Secretary: SE/HQ

Note-taker: E/HQ

In attendance: Senior Engineer in charge of the projects/contracts under submissions.

- Co-opted members :
1. CE/E&MP, CE/ST1 and CE/ST2 will be invited to attend the CAREC meeting when combined E&M and civil engineering works contracts or projects with major E&M parts are involved.
 2. Other co-opted members will be invited as and when required.

Terms of Reference

- (a) Vetting PE to be depicted in PWSC papers and PTE of all capital works contracts (other than PTE of E&M works) with PTE over \$30M;
- (b) Reviewing the design, specifications and method of measurement for relevant works contracts with respect to physical and legal impossibilities, unforeseen ground conditions and interference by utility work;
- (c) Vetting preliminary project costs of TFS submissions and recurrent consequences for inclusion of new projects in the Capital Works RAE;
- (d) Developing and upkeeping a centralised database of unit costs and

rates for preparation of PE and PTE; and

- (e) Reviewing the current practices and methodologies used for preparing PE and PTE and issuing relevant guidance with the aim of improving the accuracy of such estimates.

**Committee to Assess Risks and Estimates for Electrical and Mechanical
Works Contracts
[CAREEM]**

Membership

- Chairman : AD/E&M
- Members CE/E&MP
CE/ST1
CE/ST2
- Secretary : A designated SEME of E&M Projects Division
(assigned by CE/E&MP)
- In attendance: SEME of E&M Projects Division in charge of the
contracts under submissions.
- Co-opted members :
1. SE/CA (for contracts involving complicated contractual arrangement or new requirements stipulated under various technical/financial circulars)
 2. SE/HQ (for contracts requiring advices from programme planning point of view)

Terms of Reference

- (a) Vetting PTE of capital works contracts on E&M works with PTE over \$18M;
- (b) Coordinating with SE/HQ in upkeeping the existing centralized database of unit costs and rates of similar E&M equipment for project officers' reference in preparation of PTE; and
- (c) Reviewing the current practices and methodologies used for preparation of PTE and issuing relevant guidance aimed at improving the accuracy of estimates.