SUPPLEMENT to the Procurement Guideline for Consulting Engineering Services

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The "2013 Supplement" to the CESA "Procurement Guideline for Consulting Engineering Services"

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## **INTRODUCTION**

The 2013 Supplement to the Procurement Guideline for Consulting Engineering Services (the "2010 PCES Guide") continues to reflect best practice today for clients and consulting engineers, namely to appropriately invite and respond to calls for consulting engineering services in a true value-added context. The 2013 Supplement likewise continues to include the requirements of applicable legislation including the Construction Sector Charter and the requirements of the Engineering Council of South Africa (ECSA) "Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act, 2000" (the "ECSA 2013 Guideline"). In addition, the Scope of Services published by the Professional Consultants Services Agreement Committee (PROCSA) is introduced to give clients a wider choice when determining the services required of the consulting engineer.

Wherever possible the terminology used in the 2013 Supplement has been aligned to reflect the terminology and methodology contained in the ECSA, PROCSA, and CIDB documentation. The primary purpose of the 2013 Supplement is to update the practices and procedures put forward in the 2010 PCES Guide, in the light of legislative developments, shifts in policy and areas needing improvement or updating since 2010.

# The 2013 Supplement follows the same order as the chapters of the 2010 PCES Guide, with the main changes outlined below:

### CHAPTER 1: LIFE CYCLE OF THE PROJECT

The title of this chapter has been changed. The figure depicting the 9 elements of the Project Life Cycle is discussed in more detail. A commentary has been added, to describe the elements in which the consulting engineer's design services play a critical role.

### CHAPTER 2: CONSULTING ENGINEERING SERVICES AND ATTRIBUTES

The title of this chapter has been changed. No change has been made to the text, which follows on from that in Chapter 1.

### CHAPTER 3 PROCUREMENT OF CONSULTING ENGINEERING SERVICES

Update on CIDB prescripts applying to parastatal organisations and update on the impact of the use of Quality (Functionality) as a threshold arising from the "KZN Judgement". Appendix D (Procurement Cycle – Checklist) shown in summarised form.

### CHAPTER 4 SCOPE

Greater emphasis on Scope of Services (alternatively renamed Services Required) and Scope of Work with reference to new Appendix F(A), the ECSA 2013 Guideline, which makes it clear that scope descriptions by the client are essential.

Details of typical services by consulting engineers are added, based on the 2013 ECSA Guideline and PROCSA Scope of Services by Stage & by Discipline

### CHAPTER 5 TENDER DOCUMENTATION FOR CONSULTING ENGINEERING SERVICES

No changes, but a summary of the existing Appendix G is now included in the Supplement chapter.

### CHAPTER 6 VALUE-ADDED SERVICES

The Supplement emphasises the role of Quality to ensure added value and putting fees in a value-added perspective, with the 'Ability to Influence' figure. A Note is added on client responsibility to ensure service provides for optimum life cycle costs, not only lowest cost of design. Inappropriateness of Quality as a threshold is emphasised. A Note is added on the new departure in the ECSA 2013 Guideline to estimate fees with "discount" on a percentage scale of fees no longer possible. "Benchmarking" however remains relevant.

### CHAPTER 7 EVALUATION OF TENDERS

A step-by-step procedure to set criteria for evaluation and scoring based on the existing Tables 7-1 to 7-6 of the 2010 PCES Guide is presented, to arrive at scores for Quality, Price (Financial Offer), and Preference. This clarifies the existing procedure in the 2010 PCES Guide. Table 7-7 is introduced in the Supplement to evaluate Quality where it may only be used as a threshold.

### CHAPTER 8 PERFORMANCE MONITORING

The rationale in the PCES Guide remains valid but a more "user friendly" approach, with new documentation presented, is given in the Supplement.

### **APPENDICES**

Fees

Appendix A	Integrity Pact No change
Appendix B	The Case for using Method 4: Financial Offer, Quality and Preference No change
Appendix C	Framework Agreements and Term ContractsNo change
Appendix D	The Procurement Cycle – Checklist No change
Appendix E	Examples of Best Practices in Procurement No change
Appendix F	Example of Scope of Services supplemented with Appendix $F(A)$ , describing ECSA and PROCSA Scopes.
Appendix G	CIDB Tables to Assist in Compiling Tender Documents No change
Appendix H	Explanatory Notes on ECSA Guidelines replaced with Appendix H(A), the ECSA 2013 Guideline, to estimate

Appendix I Useful Websites ..... No change

Appendix J Using the Construction Charter Scorecard to Determine the Preference Score, New Appendix to the 2013 Supplement

### Cheap design is expensive

If you deal with the lowest bidder, it is well to add something for the risk you run. And if you do that you'll have enough to pay for something better ....John Ruskin

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# FOREWORD

2013 Supplement to the CESA Procurement Guideline for Consulting Engineering Services

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This Supplement is published by CESA in accordance with a policy of subjecting its "Procurement Guideline for Consulting Engineering Services" to periodic review, to ensure its content continues to be relevant and up to date. The "2013 Supplement" represents the first major update since the original publication of the Procurement Guideline in 2010. The contents of the supplement are presented in good faith and are intended as general guidance on matters of interest only. The authors and the organisations to which the authors belong make no representation or warranties, either expressed or implied, as to the completeness or accuracy of the contents.

All information is presented on condition that the person receiving it will make their own determinations as to the suitability of using the information for their own purposes, and on the understanding that the information is not a substitute for specific technical or professional advice or services.

This "2013 Supplement" has been written as a stand-alone document. It covers all the chapters and sections as listed in the original Procurement Guideline, published in 2010 and 2011 (the "2010 PCES Guide"). Where there are no changes, this is stated. The 2013 Supplement can thus be used by the reader as the main means of understanding CESA's rationale for best practice procurement of consulting engineering services, referring as required to the original 2010 PCES Guide.

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# DEFINITIONS

The definitions (i) to (xlii) in the 2010 PCES Guide are unchanged.

### However additional definitions are now included in the 2013 Supplement as follows :

- (xliii) "Project Cost" means the same as "Cost of the Works" as defined in the 2010 PCES Guide
- (xliv) "Services Required" (or "Required Services") means the same as "Scope of Services" as defined in the 2010 PCES Guide
- (xlv) "Professional Services Contract" means the same as "Contract" or "Form of Agreement" as defined in the 2010 PCES Guide
- (xlvi) "ECSA 2013 Guideline" means the Guideline for Services and Processes for Estimating Fees for Persons Registered in terms of the Engineering Profession Act 2000 (Act 46 of 2000) and published in the Government Gazette, to be effective from 1 January 2013
- (xlvii) "Engineering Effort" means the extent of effort and allocation of resources required for the consulting engineer to deliver the project, taking into account the situation of the project and applicable "influencing factors" which indicate the level of effort required, as applied in the ECSA 2013 Guideline.
- (xlviii) "PROCSA" means the Professional Consultants Services Agreement Committee, whose constituents are:

Africa Association of Quantity Surveyors Association of Construction Project Managers Association of South African Quantity Surveyors Consulting Engineers South Africa South African Black Technical and Allied Careers Organisation South African Institute of Architects South African Property Owners Association

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# CHAPTER 1. LIFE CYCLE OF THE PROJECT

Every project begins with an idea, or the identification of a need, or a decision that the project should be brought into being.

The Life Cycle illustrated in Chapter 1 of the 2010 PCES Guide is a typical example of the stages gone through in the life of a project, with Stages 1 to 3 aimed at defining the project, Stages 4 to 6 aimed at design and procuring construction services, Stage 7 devoted to construction and the remaining Stages 8 and 9, of operation/maintenance/disposal/renewal being undertaken by the client.

Many clients lose sight of the fact that they have an important obligation when providing infrastructure and allied assets, which is to ensure that the article produced should not only be economical to create, but during its working life it must perform economically. For example the working life of a power station can exceed fifty years, while a dam must perform its function for more than a hundred years. In other words consideration of the life cycle costs of the project is essential, particularly where public funds are used to deliver the nation's infrastructure. Sadly, nowadays the concentration is more on minimising the costs of creating the project, instead of minimising its life cycle costs.

As indicated in later chapters, the engineering design costs (1 to 2%) plus construction costs (6 to 18%) are unlikely to exceed 20% of the project's life cycle costs - yet the pressure which prevails to keep the design costs down, and to an extent, contain the construction costs, effectively prevents any opportunity to optimise the life cycle costs. To illustrate this, the stages 1, 2, 3, 4 and 5 described in Chapter 1 of the 2010 PCES Guide, being Identification, Definition, Feasibility, Viability and Design, are where the form of the project, and magnitude of its life cycle costs, are decided. The costs of these stages will be about 50% of the total design costs – about 1.0% or I / 100<sup>th</sup> of the life cycle costs! To focus on price alone for these services is misguided indeed. Proper procurement should link the price directly to the quality or functionality of the service. This is advocated in the chapters which follow. The same reasoning applies to stages 6 and 7, being Procurement and Construction, but since design is complete, their influence on the life cycle costs is far less. The influence of price for these services and for construction itself will outweigh any influence of functionality.

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The 2013 Supplement introduces two more detailed presentations of the services to be provided by the consulting engineer, which are relevant to the Scope of Services or Scope of Work envisaged by the client. These are :

### (a) The ECSA 2013 Guideline (see Definition) which describes the following in its Section 3:

- 3.1 Planning, Studies, Investigations and Assessments
- 3.2 Normal Services:
  - Stage 1 Inception
  - Stage 2 Concept and Viability (or Preliminary Design)
  - Stage 3 Design Development (or Detail Design)
  - Stage 4 Documentation and Procurement
  - Stage 5 Contract Administration and Inspection
  - Stage 6 Close-Out

### 3.3 Additional Services:

- 3.3.1 Additional services pertaining to all project stages (26 items)
- 3.3.2 Construction Monitoring
- 3.3.3 Occupational Health and Safety Act 1993 (Act 85/93)
- 3.3.4 Quality Assurance System
- 3.3.5 Lead Consulting Engineer (3 services)
- 3.3.6 Engineering Management Services (Principal Consultant),
  - (includes Additional Services & Deliverables for all 6 Stages above)
- 3.3.7 Mediation, Arbitration and Litigation proceedings & similar
- 3.3.8 Principal Agent of the Client (includes Principal Agent services and Deliverables for Stages 3 to 6 above)

See Appendix F of the 2010 PCES Guide and Appendix F(A) of this Supplement.

(b) **The PROCSA Matrix** which shows the scope of services by project stage (6 stages as above and below) and by the built environment discipline (of which there are 8 disciplines, named below:)

Stages:

- Stage 1 Inception
- Stage 2 Concept and Viability
- Stage 3 Design Development
- Stage 4 Documentation and Procurement
- Stage 5 Construction
- Stage 6 Close-Out

#### **Disciplines:**

Project Manager, Principal Consultant and Principal Agent Principal Agent Architect Quantity Surveyor Structural Engineer Civil Engineer Electrical Engineer Mechanical Engineer

Deliverables are listed for each Stage and for each Discipline.

See Appendix F(A) of this Supplement for further details

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# CHAPTER 2. CONSULTING ENGINEERING SERVICES AND ATTRIBUTES

Based on the range of services outlined in Chapter 1 of the 2010 PCES Guide, this brief chapter introduces the "Required Expertise and Key Attributes for Value", with the concept of functionality or quality being relatively more important than the cost of the engineering services – particularly in the early stages of the project cycle.

The content of this chapter is a logical follow-on from the content of Chapter 1.

Apart from the change to the title, no changes are effected by the 2013 Supplement to the content of Chapter 2.

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### CHAPTER 3. PROCUREMENT OF CONSULTING ENGINEERING SERVICES

As stated in the 2010 PCES Guide, Government recognises "it is necessary that certain minimum requirements of quality and efficiency be achieved when appointing consultants". Furthermore, the Constitution of South Africa requires that government procurement systems must be Fair, Equitable, Transparent, Competitive and Cost-effective, while Promoting other objectives. These requirements are contained in Table 3-1 of the 2010 PCES Guide insofar as they apply to procurement of consulting engineering services. This implies the need to maintain a balance between reasonable compensation, which will ensure continued attractiveness and development of the profession on one hand, while ensuring competition on the other.

Table 3-2 lists 10 pieces of legislation, which provide a legislative framework to promote transformation. It is compulsory for "Organs of State" to comply with the principles of this legislation, and with the "Standards for Uniformity in Construction Procurement" (SFU) of the Construction Industry Development Board (CIDB)

Note that until recently, parastatal organisations, in not being considered as Organs of State, were exempt from complying with these requirements. This is no longer the case. The Minister of Finance has not extended this exemption and the parastatals now fall under the 2011 Preferential Procurement Regulations. CESA is in possession of written evidence to this effect.

The CIDB's Table 3-3 (Methods of Procurement) is still valid and Table 3-4 (Competitive Selection Procedures) remains mandatory for public bodies. For consulting services, where cost effective and value-added performance is highly dependent upon innovativeness, expertise and competence, the inclusion of Quality for selection is of paramount importance. The 2010 PCES Guide recommendation, that in the majority of cases, Method 4 of Table 3-3 (Financial offer, Quality and Preference) i.e. Quality and Cost based Selection – (QCBS) - should be used, with Preferencing as dictated by the State from time to time, continues to be applicable.

The best practice recommendation of QCBS in the 2010 PCES Guide has been frustrated however by what has been termed the "KZN court ruling" which relegates Quality/Functionality to be treated as a separate hurdle, i.e. the score for Quality cannot be added to the combined total score. This is contrary to international best practice (see Appendix E of the 2010 PCES Guide) and has proved to be a setback to the correct method of procuring professional services. The CIDB published a Position Paper on the "Evaluation of Best Value for Money in Construction Industry Related Tenders" which suggests it is conceivable to accommodate the evaluation of best value for money, despite the court ruling. Consultations between the CIDB and National Treasury are continuing.

**Appendix D** of the 2010 PCES Guide, "**The Procurement Cycle – Checklist**" tabulates 30 task areas required and detailing actions to be undertaken by the Client or Consulting Engineer. **26** of these task areas list actions required of the Client.

### The checklist is summarised below:

### 1. Establish what is to be procured - by Client

- **1.1** Identify the service
- 1.2 Prepare broad scope of work
- 1.3 Estimate financial value of proposed procurement
- 1.4 Commence procurement process

### 2. Decide on procurement strategies - by Client

- 2.1 Confirm the preferential procurement policy
- **2.2** Confirm contract and pricing strategies
- 2.3 Agree targeting strategy
- 2.4 Finalise procedure

### 3. Invite tender offers - by Client

- 3.1 Prepare tender documents
- **3.2** Approval of tender documents
- 3.3 Confirm budget
- 3.4 Invite tenders
- 3.5 Hold briefing and site inspection (if required)

### 4. Preparation and submission of tender - by Consulting Engineer

- 4.1 Receive all documents
- 4.2 Prepare tender
- 4.3 Assemble, deliver tender
- **4.4** Actions in tender period

### 5. Receive tenders - by Client

- 5.1 Open and record tenders
- 5.2 Confirm tenders complete
- 5.3 Confirm which tenders are responsive or not

### 6. Evaluation of tenders - by Client

- 6.1 Reduce tenders to comparative offers
- 6.2 Consider tender offers
- 6.3 Review claims for preferences
- 6.4 Points for financial offer
- 6.5 Award points for quality
- 6.6 Award points for preferences
- 6.7 Total points and rank tenders
- 6.8 Risk assessment
- 6.9 Evaluation report and recommendation

### 7. Acceptance of successful tender - by Client

7.1 Confirm award to successful tenderer

The checklist in Appendix D is to be commended to every client who is, or expects, to be engaged in the procurement of consulting engineering services.

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# CHAPTER 4. SCOPE

"Scope of Services" and "Scope of Work" are both defined in the 2010 PCES Guide. A further definition, that of "Required Services" has been added in the 2013 Supplement. This seeks to avoid the confusion which often arises when referring to Scope of Services and Scope of Work, for example quoting Scope of Work only is seen to include Scope of Services – which it does not. It is essential for both of these scopes to be described clearly by clients procuring professional services. Experience has however shown that confusion often arises in the drafting, interpretation and application of both these "Scopes".

The renaming of "Scope of Services" to "Services Required" in the 2013 Supplement should assist procurement bodies to accurately describe the services wanted for the project. Typical Design and Implementation stages are illustrated in Figure 4-1 of the 2010 PCES Guide, but reference should be made to the ECSA 2013 Guideline, or the PROCSA Matrix (see Appendix F of the 2010 PCES Guide and Appendix F(A) of this Supplement), rather than the services described briefly in Sections 4.1 or 4.2 of the 2010 PCES Guide.

Note in particular the ECSA 2013 Guideline lists both "Normal" and "Additional" services. The PROCSA Matrix sets out the scope of services across the same 6 stages given in Figure 4-1, for various built environment professions, besides engineers. This is useful to the client employing the services of a team of these professions, to select the services required of the Project Manager, Principal Agent, Architect, Quantity Surveyor and Engineers, and so avoid overlap.

Both the ECSA and PROCSA lists of services include Deliverables to be produced by the consultant. By stating these the client and consultant are able to understand precisely each service required, and price it accordingly.

The client's requirements for the project cannot be complete without the Scope of Work – describing the portions of the project for which the consulting engineer is engaged and showing the situations where and in which the deliverables shall be provided. Section 4.3 of the 2010 PCES Guide continues to provide clear guidance in preparing the "Scope of Work" including useful examples in Table 4-1. At Table 4-2 (Key Factors in developing Scope) attention is drawn to new Construction Regulations arising from changes to the Occupational Health and Safety Act, expected to be promulgated in 2013.

Note : Where the Services Required and Scope of Work cannot yet be identified by the client, then "Framework Agreements or "Term Contracts" may be used, as described in Appendix C of the 2010 PCES Guide. These cannot however be used as substitutes for defining the Services Required and Scope of Work where the project is already developed up to, or beyond, the concept stage.

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# CHAPTER 5. TENDER DOCUMENTATION FOR CONSULTING ENGINEERING SERVICES

This is a logical follow-on from Chapter 3 (Procurement) by presenting a standardised listing and sequence of documentation to be assembled for tenders and for contracts – being applicable to both professional services by consulting engineers and construction services by contractors.

Appendix G of the 2010 PCES Guide contains tables drawn up by the CIDB to assist in compiling tender and contract documentation. This Appendix is still valid. It is summarised below, to highlight the importance of standardisation and uniformity of documentation in both the public and private sectors:

### **Documents Relating to the Tender**

### **T1 Tendering Procedures**

T1.1 Tender Notice and invitation to Tender (White forms) Alerts tenderers to services required, should contain sufficient information for appropriate responses.

T1.2 Tender Data (Pink forms) Applicable conditions of tender and rules applying from tender invitation to tender award.

### **T2 Returnable Documents**

T2.1 List of Returnable Documents (Yellow forms) Ensures everything required to be submitted with the tender is included in the submission.

T2.2 Returnable Schedules (Yellow forms) Documents and schedules to evaluate tenders plus other schedules to be included in the contract.

### **Documents Relating to Form of Agreement**

### C1. Agreements and Contract Data

C1.1 Form of Offer and Acceptance (Yellow forms) Formalises the legal process of offer and acceptance

C1.2 Contract Data (Yellow forms) Applicable conditions of contract and contract specific data, describing risks, liabilities and obligations

C1.3 Form of Guarantee/Securities (White forms) Usually required for construction contracts, for consulting agreements: minimum PI insurance

C1.4 Adjudicator's Contract (White forms) For construction or consulting contracts, Adjudicator appointed by both parties, sharing costs.

### C2. Pricing Data

C2.1 Pricing Instructions (Yellow forms) Provides criteria and assumptions which the Tenderer has used in developing his Financial Offer

C2.2 Activity/Work Schedule (Yellow forms) Records the Financial Offers to provide the services as described elsewhere – in the Scope section.

**C3.** Scope of Services and Scope of Work (Blue forms) Types of services to be provided (see Chap. 3) with deliverables. Scope of Work: where services are applied.

**C4. Site Information** (Green forms) Used for construction contracts, includes information on prior studies, existing services etc.

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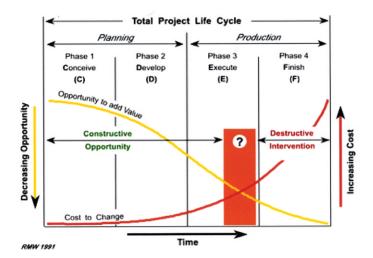
### **CHAPTER 6. VALUE-ADDED SERVICES**

This chapter reinforces the points made in the 2010 PCES Guide, as set out below:

While the chapter seeks to guide the consulting engineer towards an appropriate and effective method for determining his financial offer when submitting a tender, it also seeks to bring home to the client the realisation that firstly, to award a tender which adds maximum value to the services to be provided, the essential aspect of Quality (also called Functionality) must be linked directly to Price in the consideration of tenders for award. Secondly the client must realise he needs to create a framework wherein the consulting engineer can quote an appropriate and accurate price for the services required. **This means a clear description of the Services Required and Scope of Work.** This is essential – the client is paying for a range of services unique to the project, not merely purchasing a commodity which can be universally applied.

Thirdly, both consulting engineer and client should realise that the most effective way for the services to add value will be where the optimum life cycle costs of the project can be determined. This is already emphasised in Chapter 1 (Life Cycle of the Project). Considering the figure below, known as the "Opportunity to Influence" diagram, this compares, over the stages of the project, the ability of the consulting engineer to estimate the overall project cost in terms of initial construction cost plus operating and maintenance costs over the life of the project. Clearly, during the conceptual design stages of the project by the consulting engineer the greatest "opportunity to influence" the overall costs exists. Here alternatives can be considered, different technologies evaluated, and more accurate predictions made of alternative construction and O&M costs. At the same time, the money expended by the client is extremely small in relation to the overall life cycle costs – around 2%.

Following this phase, construction will involve much greater expenditure by the client but there is now little opportunity to influence the overall costs because the project has already been defined. In the operating and maintenance phase, when most of the overall costs will be incurred, there will be even less opportunity – the project has been built. It must now be operated and maintained for all its working life.



The procurement process cannot be based on Price alone but must at the same time consider Quality, with Price and Quality being two independent aspects, but linked together when evaluating them in the provision of infrastructure. The client authority has a responsibility to provide a project with the most optimum life cycle costs – not the lowest cost of design or construction.

The current policy of using Quality as a "threshold" after which tenders are considered on the basis of Price, will NOT meet the client responsibility described above. Given a threshold of say 70%, tenders scoring say 71% and 91% for Quality must then both be compared on Price. It is safe to assume the 91% tender has provided for more effort and resources to determine the project life cycle cost than the 71% tender, but the former tenderer's price will inevitably be considerably higher than the latter's price. It is inconceivable that the lower price will include sufficient, let alone more effort in it to determine the optimum project life cycle cost – yet this tender is far more likely to be awarded than the one with higher Quality.

To sum up, the emphasis on lowest price as the governing factor in awarding a tender for consulting engineering services can only be justified where the service is routine, repeated, predictable and straightforward – which can only apply in a minority of instances.

Section 6.3 of Chapter 6 (Guidelines for Pricing of Tenders), remains valid. It should be read and understood by every consulting engineer, especially those engineers who tend to rely on quoting a percentage fee extracted from recognised fee scales.

# In 6.3 it is essential for the consulting engineer to know his costs, and to be able to apply these to the times and resources allocated to the tasks identified by him to perform the services required.

At 6.4, (The Relevance of a Benchmark), this continues to be relevant. Invariably, after arriving at a price determined in section 6.3, the consulting engineer wishes to compare his price against a 'Benchmark''.

The 2013 Supplement updates Section 6.4 by quoting the ECSA 2013 "Guideline for Services and Procedures for Estimating Fees", effective from 1 January 2013 as the means to arrive at a benchmark, in place of any earlier ECSA percentage-based fee scales. Use of the ECSA 2013 Guideline is described in Appendix F(A) in this Supplement.

At 6.5, the "multiplier" to adjust the Benchmark, continues to be applicable.

At 6.6 the "Concept of Value Bidding" and attendant reference can still be referred to. As stated, this is likely to be of most use in pricing consulting services for long and complex projects.

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# CHAPTER 7. EVALUATION OF TENDERS

The chapter in the 2010 PCES Guide starts at 7.1 and 7.2 with a procedure for using Method 4 as recommended by the CIDB, with the basic steps:

- 1. Score Quality, rejecting offers whose score is below the minimum
- 2. Score Financial Offer, i.e. Price
- 3. Confirm tenders eligible for preferencing
- 4. Score Preferencing
- 5. Calculate total tender points per tender
- 6. Rank tender offers according to total tender points
- 7. Recommend tender with highest total score for award.

Although this is not presently possible in the public sector in the face of National Treasury policy of using Quality only as a threshold, it is expected that the policy will be revised in future and revert to allowing Method 4, i.e. adding independent scores for Quality, Price and Preference. The procedure for Method 4 can nonetheless be followed, but using Quality as a threshold, with evaluation thereafter based on Price and Preference. However the Recommended Approach at section 7.3 for assembling and evaluating Quality criteria, including the new CESA recommendations to score 100/70/50/10 % for Very good/Good/Satisfactory/Poor, continues to apply. Note also the ratio (Financial Offer + Quality) to (Preference) now changes from 80:20 to 90:10 as the value of the assignment goes above R1 million (previously R500 000).

# Although at section 7.4 (Evaluation Procedure) the formulae quoted can be followed, it is practically more suitable to follow the basic steps 1 to 7 above using Tables 7-1 to 7-6 as a guideline for evaluating tenders and arriving at a recommendation for award, as set out below:

Tables 7-1 to 7-6 provide a roadmap to determine the Quality score and should be applied as follows:

- (a) Decide the "Nature" of the project from the 5 typical project types listed (e.g. a "Complex" project)
- (b) Confirm if a (Quality + Price) : (Preference) ratio of 80:20 or 90:10 applies and proceed to use Table 7-2 or 7-3
- (c) Agree the split of 80 or 90 points between Price and Quality (e.g. Table 7-2, Complex project, Financial Offer (Price) has 20 maximum points, Quality 60 maximum points)
- (d) Select five or six Quality Criteria from the 9 criteria tabled (more than 6 can lead to overlaps or repetition) appropriate to the project (e.g. Table 7-2, Complex project, 6 criteria with points allocated totalling 60 as in (c))
- (e) Note the same mechanism applies if using Table 7-3 instead of 7-2 (e.g. Table 7-3, Complex project, 5 criteria totalling 70 points)
- (f) Note, for the evaluation, how to score each of the 9 Quality criteria, between Very good/Good/Satisfactory/Poor being 100/70/50/10 % of the points allocated to each criterion, using the Evaluation Indicators in Table 7-4. Attention is drawn particularly to the change of 0% to 10% for "Poor" to conform with general practice elsewhere.

(g) If desired, refer to table 7-5 to further evaluate Quality criterion no. 2, "Qualifications & Competence of Key Staff in relation to Scope of work". This is to be completed by the client when issuing tenders by inserting the client's Preferred and Minimum points for the person's Qualification, Years experience, Professional registration, Years professional experience and Involvement in comparable projects. The table shown provides for 6 key posts. The client is at liberty to use all 6 or more posts and other selection criteria if so desired. Scoring from the table can then be used to score Quality criterion no. 2 in Table 7-2 or 7-3.

Reference to the worked example in Table 7-6 of an evaluation by Reviewers of tenders received, to arrive at the Quality Score for each tender, is strongly recommended. Note the importance of the review by independent reviewers and the need for close agreement between their results by the avoidance of "outliers" (differing by more than one step in the rating given to any quality criterion) by means of collaboration and re-review as illustrated.

The consensus result gives the points for Quality of the tender under consideration against the maximum points for Quality only, according to the nature of the project in Table 7-2 or 7-3. Following this, the determination of the score for Financial Offer (or Price) is straightforward, and is based on the formulae in Section 7.4:

### e.g. Nm = Score for Price

- W1 = Weight assigned to Price (see Table 7-2 or 7-3 where 80 or 90 points For Quality and Price are split between Quality only or Price only, according to Nature of the project in Table 7-1
- Pm = Lowest price (or most favourable tender offer) from qualified tenderers
- P = Comparative price or offer of the tender under consideration

### The points for Price are computed from: $Nm = W1 \times Pm/P$

Finally, to score Preferences, reference should be made to the Construction Charter Scorecard. This is mandatory. Changes to this scorecard are currently being made to bring it in line with the Generic scorecard, i.e. the latest Construction Charter scorecard should be applied. Refer to Appendix J in this Supplement, "Using the Construction Sector Scorecard to determine the Preference Score".

In the light of the current policy to use the Quality score only as a threshold, it cannot be incorporated into the (Quality + Financial Offer) score as described above and illustrated by Tables 7-2 and 7-3 in the 2010 PCES Guide. Accordingly Table 7-7 is introduced in the 2013 Supplement, to use when a Quality threshold applies. This shows maximum points for Quality as 100, and furthermore shows suggested maximum scores for the 9 aspects of Quality, being allocated according to the project type, and totalling 100. Note the table also shows a recommended threshold value for each project type.

### Table 7-7 : Quality Criteria and Points scale - Quality used as a Threshold

This table shows an example of Quality Criteria and Points scale for all projects, with the Quality score to be a Threshold. Note that Maximum points for Quality = 100. Note also that the more complex the project, the higher the Threshold points. Of the 9 Quality criteria, it is recommended that not more than 6 criteria, suited to the project type, be used to avoid double counting from overlap between the 9 criteria. Within the 6 selected criteria, allocation of points can be varied as desired to give the client's weighting to each criterion, but always totalling 100 points. This table is also suited to CIDB Method 2

Quality Criteria	Feasibility studies	Innovative	Complex	Straightforward	Repeat
	& Investigations	Projects	Projects	Projects	Projects
Martin an Datata (a. O. alti	100	100	100	400	400
Maximum Pointsfor Quality	100	100	100	100	100
Minimum Points for Quality (Threshold)	85	80	75	70	65
1. Adequacy of proposed work plan & methodology	15	15	15	15	20
2. Qualifications & competence of key staff, to suit scope of work	30	30	30	20	20
3. Demonstrated experience (past performance) in comparable projects	15	15	15	20	25
4. Approach to attain the Employer's stated objectives including training	15	15	15		
5. Demonstrated experience w.r.t. specific aspects of the project	15	15	15	15	10
6. Sound knowledge of Employer's policies and/or work pocedures				15	10
7. QA systems to ensure compliance with Employer's stated requiremts.	10	10	10	15	15

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# CHAPTER 8. PERFORMANCE MONITORING (of Consulting Engineers)

The introduction to this chapter points out the CESA requirement for a member firm to have a Quality Management System (QMS) compliant with ISO 9001:2008 and to adhere to CESA's recently introduced Business Integrity Management System (BIMS) – see Appendix A of the 2010 PCES Guide

Both these requirements are in support of the achievement of maximum quality in the execution of the assignment by the consulting engineer

Although as stated in the 2010 PCES Guide at section 8.3, the performance monitoring of consulting engineers is strictly speaking not part of the procurement process, it is nevertheless relevant to include it, as a sequel to procurement. Arising from the emphasis on Quality in evaluation of tenders submitted by consulting engineers, the monitoring of their performance will assist to ensure that the highest standards of quality are maintained in executing the assignment.

The documentation put forward in the 2010 PCES Guide pertaining to the Quality criteria and scoring (Table 8-1), Customer Questionnaire (Table 8-2) and further Guide for Scoring (Table 8-3) have been "streamlined" to allow the evaluation and scoring system to be more straightforward and easier to use in the hands of the client. The revised approach is given below.

 Table 8-1A shows the Performance Rating Scale recommended by CESA.

The scale contains 5 ratings – "Very Poor" (1), "Improvement Required" (2), "Satisfied" (3), "Above Average" (4) and "Excellent" (5).

This is followed by CESA's suggested criteria for scoring with these ratings, being based on the Client's opinion of the consulting engineer's performance, from "Extremely unhappy" (Very poor rating) to "Highly impressed" (Excellent rating). These criteria are brief, and are suited to a project which is straightforward and of relatively short duration. For complex projects of longer duration, the Detailed Indicators set out in Table 8-3A are considered more useful.

**Table 8-2A** comprises a Scorecard, lifted from Table 8-1 in the 2010 PCES Guide, which forms the Satisfaction Survey questionnaire, to be the completed by the Client by scoring the quality of various attributes of the consulting engineer's performance. This replaces the Table 8-2 given in the 2010 PCES Guide.

**Finally, Table 8-3A** is a repeat of, and replaces Table 8-3 in the 2010 PCES Guide, to be used alongside Table 8-1A by providing Detailed Indicators to determine the appropriate Performance Rating 1 to 5, which ratings are only given in a summary form in Table 8-1A. The Detailed Indicators will be suitable where the client's project is complex or multi-faceted, and the consulting engineer's performance covers a wide variety of tasks, over a relatively lengthy period of time.



PERFORMANCE RATING SCALE						
1	2	3	4	5		
Very poor	Improvement required	Satisfied	Above Average	Excellent		

Guide for Scoring - Criteria for Evaluation				
Very Poor	Client extremely unhappy; not prepared to use firm again unless vast improvement.			
Improvement Required	Client not happy & dissatisfied, but would use firm again, provided key issues addressed.			
Satisfied	Client generally satisfied he has received value for money; would use the firm again.			
Above Average	Client received more than contracted value, firm went beyond brief. Would re-use them.			
Excellent	Client highly impressed; firm went the extra mile, adding significant value. Would definitely prefer to use the firm again.			

Notes:	- An overall score of 3 is considered satisfactory performance.
	- The maximum score attainable is 5.

### Table 8-2A : Satisfaction Survey (Questionnaire)

CLIENT SATISFACTION SURVEY	
Client:	
Project	
Consulting Engineer:	

NOTE: Score 1 to 5 those items applicable to the Project

Item	Description (Qualitative Criteria)	Score
1	Quality of Design	
	1.1 Creativity / Innovation and Appropriateness	
	1.2 Understanding Client & Legal Requirements	
	1.3 Documentation and Drawings	
	1.4 Environmental Issues / sustainability.	
	1.5 Health and Safety Issues	
	1.6 Life Cycle Costs	
2	Adherence to Time Constraints	
	2.1 Completion of Work Stages	
	2.2 Response to Queries	

continued

### Table 8-2A (continued) : Satisfaction Survey

3	Recognition of Cost				
	3.1 In Designs				
	3.2 Protecting Client Interests				
	3.3 Accurate Costs and Forecasts				
	3.4 Scope control				
4	Project Administration				
	4.1 Record Keeping				
	4.2 Legal and Financial				
	4.3 Programme				
	4.4 Minutes and Reporting				
	4.5 Handling Variation Orders and Claims				
5	Communication and Interfaces				
	5.1 Jurisdictions / Stakeholder Consultations				
	5.2 Client, other Consultants and Contractors				
	5.3 Managing investigations, monitoring and testing				
6	Construction and Post Construction				
	6.1 Monitoring during construction				
	6.2 Documentation and 'Asuilt Drawings'				
	6.3 Oversight during maintenance period				
	6.4 Contract Administration				
7	General				
	7.1 Staff competency				
	7.2 Head Office Support				
	7.3 Discipline and Administration				
TOTAL SCORE (Sum of values in each line item scored)					
FINAL RATING : [AVERAGE SCORE = Total Score/number of line items scored]					

Client's comments or suggestions :

### Table 8-3A Detailed Indicators for Scoring

Note:	Use line items applicable to project in each category E to A to determine score 1 to 5.
E. Very Poor	Did not identify project objectives, omitted to deal with all aspects of the brief.
-	Key staff very inexperienced, unable to deal with all aspects of the project.
	Key staff insufficiently skilled and not competent to undertake the work.
	Virtually no knowledge of client policies/procedures, minimum support and communication.
Max. score = 1	No Quality Management System evident, adherence to Quality inadequate.
	No proper organisational, logistic & support resources deployed to the project.
	Virtually no knowledge & experience in management of similar type projects.
	Failed to meet all critical deadlines & budgets, minimal senior staff involved.
In Summary:	Client extremely unhappy; not prepared to use firm again unless vast improvement.
D. Improvement required	Did not satisfy project objectives, critical aspects of brief not dealt with properly.
	Key staff lacked sufficient competence, did not apply their skills correctly.
	Key staff lacked adequate experience to deal with key aspects of the project.
	Limited knowledge of client policies/procedures - insufficient support, poor communication.
Max. score = 2	Lack of an adequate QMS or insufficient adherence to Quality to meet client requirements.
	Not enough organisational, logistic & support resources deployed for project.
	Limited knowledge and experience in management of similar type projects.
	Failed to meet some deadlines, some budgets exceeded, insufficient senior staff involved.
In Summary:	Client not happy & dissatisfied, but would use firm again, provided key issues addressed.
C. Satisfactory	Used a generic approach to the brief, critical aspects inadequately dealt with.
c. Satisfactory	Key staff reasonably well qualified & competent to apply skills to the project.
	Key staff showed reasonable experience in comparable projects, acceptable for this project.
May seens - 2	Reasonable knowledge of client's policies & work procedures, support & communication evident.
Max. score = 3	Use of an in-house QMS, generally able to meet most client requirements.
	Indication of sufficient organisational, logistic & support resources available and deployed.
	Reasonable knowledge & experience in management of similar type projects.
	Most critical deadlines met, budget overruns controlled/corrected, adequate senior staff involved.
In Summary:	Client generally satisfied he has received value for money; would use the firm again.
B. Above Average	Approach tailored to meet project objectives, with flexibility to meet changes.
	All key staff adequately qualified & competent to apply skills to project scope.
	Key staff showed adequate experience in comparable projects, applied to this project.
	Adequate knowledge of client's policies & work procedures, supported by good communication.
Max. score = 4	Consulting Engineers QMS meets the client's quality assurance requirements for the project.
	Sufficient organisational, logistic & support resources convincingly used.
	Adequate knowledge & experience in management of similar type projects, competently applied.
	All deadlines met and budgets held, clear evidence of senior staff involvement.
In Summary:	Client received more than contracted value, firm went beyond brief. Would re-use them.
A. Excellent	Important issues handled innovatively & efficiently, in a state-of-the-art manner.
	Key staff exceptionally well qualified & competently applied their skills to the project.
	Key staff showed outstanding experience in comparable projects, to benefit of this project.
	Outstanding knowledge of client's policies & work procedures, excellent support & communication
Max. score = 5	Consulting Engineer's QMS internationally certified & meets all client's QA requirements.
	Extensive organisational, logistic & support resources convincingly used.
	Extensive organisational, logistic & support resources convincingly used. Extensive knowledge & experience in management of similar type projects, expertly applied.
	Deadlines and budgets met with significant time/cost savings, strong involvement of senior staff.
In Summary:	Client highly impressed; firm went the extra mile, adding significant value. Would definitely

# APPENDIX F(A). FURTHER EXAMPLES, SCOPE OF SERVICES

### Introduction

Appendix F of the 2010 PCES Guide lists typical services performed by the consulting engineer , based on ECSA's "Guideline Scope of Services and Tariff of Fees" as issued prior to 2013. With effect from 1 January 2013, the ECSA guideline has been renamed the "Guideline for Services and Processes for Estimating Fees." This Appendix F(A) contains further examples of the Scope of Services (also termed "Services Required") firstly from ECSA and secondly from PROCSA, as outlined below.

### Engineering Council of South Africa (ECSA) Scope of Services

ECSA's "Normal Services" are set out in detail in Appendix F of the 2010 PCES Guide. The ECSA 2013 Guideline sets out the same Normal Services, with only minor revisions. Hence Appendix F remains a valid reference.

Appendix F also contains ECSA's "Additional Services" but these are confined to services as a "Principal Consultant". The 2013 ECSA Guideline lists a more comprehensive range of Additional Services, being:

Additional Services pertaining to all Project Stages Construction Monitoring OHS Act Quality Assurance System Lead Consulting Engineer Engineering Management Services (Principal Consultant) Mediation, Arbitration, Litigation Principal Agent of the Client

The ECSA 2013 Guideline should be consulted for a full listing of these services.

### Professional Consultants Services Agreement Committee (PROCSA)

PROCSA have published a Matrix – Scope of Services by Stage, by Discipline, which sets out the services and deliverables required from the various disciplines which normally constitute the "Professional Team" on building-type projects or multidisciplinary projects. This includes Principal Agent, Architect, Quantity Surveyor and Engineers. A tabular summary of the number of tasks and deliverables for the engineering professions is shown below.

The PROCSA Matrix should be consulted for a full listing of these services.

### TABULAR SUMMARY : PROCSA : SCOPE OF ENGINEERING-RELATED SERVICES

Figures denote number of Tasks (T) & Deliverables (D)		Mgr., al Cons al Agent	Struc Engi		Ci <sup>v</sup> Engi	vil neer	Elec Engi	trical neer	Mech Engi	anical neer
STAGE	т	D	Т	D	т	D	т	D	т	D
1. Inception	9	8	9	6	10	6	10	8	8	9
2. Concept & Viability	8	3	11	3	12	4	12	4	12	4
3. Design Developmt.	8	4	7	3	9	4	9	4	9	4
4. Docmtn. & Proc'mt.	6	5	9	4	12	8	13	8	13	8
5. Construction	19	6	14	4	20	10	21	10	21	10
6. Close-Out	8	3	4	3	5	5	5	2	5	5

Note : This Matrix does not show Tasks and Deliverables for the built environment professions which do not involve engineering, viz. the Architect and Quantity Surveyor.

See also Chapter 4 of this Supplement.

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## APPENDIX H(A). THE ECSA 2013 GUIDELINE, TO ESTIMATE FEES

### Introduction

The Guideline for estimating the professional fees for engineers published by the Engineering Council of South Africa in 2013 represents a radical departure from the old order of published guideline fee tariffs and the industry will have to adapt to the new circumstances. This Appendix provides new guidelines as well as the process background to the evolution of the method of remuneration of consulting engineers and provides advice to both clients and Consulting Engineers on the application of the new guidelines as well as the process of procurement of consulting services.

The Appendix should be read in conjunction with CESA's 2010 Procurement Guideline for Consulting Engineering Services, and reference should also be made to the CESA guidelines being developed to describe the terms of reference for consulting engineering services.

The ECSA 2013 Guideline envisages two broad categories of remuneration for consulting engineering services:

- 1. Remuneration on a Time and Cost basis
- 2. Remuneration based on the Cost of the Works

The first type of remuneration generally applies to projects that are largely undefined, or for certain types of specialist service and for which remuneration based on the Cost of the Works is inappropriate. This approach has been frequently used in the past and is not new. The second approach in the ECSA 2013 Guideline is however new. The guideline no longer provides for requesting a tender based on a discount on a published guideline tariff, as the guideline does not include tariffs for arriving at a single value, but instead describes a method for deriving a band of possible fees. The overall intention of the new guideline is to make provision for a range of possible fee values based on the project type as well as to introduce related factors that may warrant higher or lower fees than the typical case.

The primary intention of the ECSA guideline is thus to provide a broad outline as to how much a formal set of services for a particular project type could be expected to cost. The actual cost will determined through the procurement process, or by negotiation and after related detailing of the project and scope of services that are to be provided.

### Use of the Guideline

The use of if the guideline in the procurement process involves the following:

1. Issuing a Request for Proposal (RFP) to prospective service providers with a clear definition of the project Scope of Work, including its size, location, nature, form and function in sufficient detail to enable the consulting engineer to accurately determine the project situation and the required level of engineering effort. Failure to do so will result in inaccurate pricing and subsequent claims by the appointed service provider.

2. A clearly defined Scope of Services required of the consulting engineer, for which the scope of Normal and Additional services provided in the ECSA guideline can serve as an initial list. (See also Appendix F(A))

3. A clear budget expectation for the Cost of the Works which will be used as a basis of remuneration of the consulting engineer. Note that the project budget is a most important element and an indicator used by the engineer to determine the value of the professional fees. The project budget provided during the procurement of the consulting engineering services should be accurate to within 15% of the final cost of the works. An inaccurate budget will result in subsequent claims by the appointed service provider,

4. A request for a proposed fee to be expressed as a percentage of the final Cost of the Works. Alternatively the fee may be expressed as a lump sum, but this should only be the case where the scope of the works and the project budget can be accurately stated in the RFP, otherwise subsequent claims will be expected from the appointed service provider.

5. The RFP must clearly describe any factors which may result in the value of the fee deviating from the norm. Examples of such factors are provided in part 3.3 of the guideline and may include, inter alia, indication of the level of site monitoring to be provided, an indication of the expected project duration, any special targeted procurement procedures to be followed when procuring contractors, the site staff envisaged and the Provisional Sum(s) that will be set aside for site staff, either seconded on a full or part time basis. Note that failure to describe any special circumstances pertaining to the project will in all likelihood result in a claim by the appointed service provider.

Should the procurement authority not have a clear definition of items 1 to 5 above, **a consulting engineer should be engaged on a Time and Cost basis to develop the Scope of Work and Scope of Services documents,** and budget to be used. Should such a consulting engineer be engaged to assist in the procurement process, he should be excluded from bidding on the project, unless his determinations can be disclosed to all bidders.

### **Competitive Bidding**

The prospective consulting engineer/tenderer can then assess the RFP and use the ECSA guideline together with consideration of the project complexity and effort to come up with a percentage fee at a R10million project cost (see 'Using the ECSA Guideline to estimate an appropriate percentage fee' provided below.) This must be adjusted for the budgeted Cost of Works to arrive at an expected fee for the services to be provided. The prospective consulting engineer/tenderer can compare this with his expectation of the cost of the services, based on an elemental cost build-up of the services required, and offer to carry out the services for a fee expressed as a percentage of the Cost of the Works.

### **Non-Competitive Bidding**

Where procurement of the service provider does not follow a competitive bidding process, the following steps should be taken:

- 1. The engineer should calculate and determine the fee following the process described in the ECSA Guideline.
- 2. The engineer must then explain and motivate to the client how he arrived at the fee based on the ECSA guidelines.
- 3. This should be followed by a negotiation process, until the fee is agreed by both parties.

(Note that the fee cannot be prescribed by the client or any other outside party)

### **Cost of Services**

For procurement purposes the cost of services will generally be determined as follows:

Cost of services = Fee percentage (%) x budgeted Cost of Works (R) plus Provisional sums (testing, surveys, site monitoring etc.)

### Using the ECSA 2013 Guideline to estimate an appropriate percentage Fee

This is done in a step-by-step procedure, as follows:

- 1. Clause 3. of the guideline contains descriptions of the services and associated deliverables generally required of the consulting engineer. These comprise Planning studies, Normal Services in 6 project Stages, from Inception to Close-Out and Additional Services, under 8 headings. These should be studied against the client's stated scope of services to verify the services required for the project in question.
- 2. Establish whether the client intends for the consulting engineer to be remunerated for his services by means of Time-based, or Project-Cost based fees (i.e. Cost of the Works). The former fees are calculated in clause 4.2, by multiplying the agreed hourly rate applicable to the consulting engineer and persons on his staff by the hours incurred by each person. The hourly rates are divided into 4 Categories of person, with the rate based on a stated number of cents per hour for each R100 or part thereof of the "total annual cost of employment" of the person with the makeup of this cost being stated.
- 3. The Project-Cost based fees are determined in clause 4.3. Firstly the "Project Type" is identified from Table 4-1 for Civil and Structural Engineering services, or Table 4-2 for Mechanical Engineering services, or Table 4.3 for Electrical Engineering services, or Table 4.4 for Miscellaneous services, (being Electronic Engineering, Engineering Management and Industrial Engineering.) Each table 4.1 to 4.3 lists a range of both Engineering and Building project types. In each of the tables a "Fee Category" is listed for each Project Type, being Categories "A" to "G", "M" and "N".
- 4. Table 4-5 indicates, for each Fee Category, the typical "Lower" and "Upper" percentage limits of the fees for the full consultancy services as set out in clause 3.2, based on a R10 million Cost of Works. Note Fee Category "N" projects (Industrial Engineering) fees will be based on Value-based (clause 4.5) or Time-based fees above. Note

also the fee ranges in Table 4-5 include normal services in respect of construction administration and site inspections as in clause 3.2.5.

- 5. The fee to be selected between the Lower and Upper percentage limits will depend on many factors, listed in Table 4-6 ("General Factors"), and "Influencing Factors" in Tables 4-7 (Civil projects) 4-8 (Mechanical projects), and 4-9 (Electrical projects). In Tables 4-7 to 4-9 the Influencing Factors are described as involving "Less Effort" or "More Effort" based on the consulting engineer's perceived complexity of the project or the "Engineering Effort" that will be necessary to execute the project.
- 6. Having selected the appropriate percentage fee from Table 4-6 to 4-9, note this applies to a R10 million Cost of Works, and it must be adjusted. This is done using Figure 4-1 for the actual Cost of Works applicable to the project. In this graphical figure the percentage fee ranges are shown on the vertical axis (to a linear scale) against Cost of Works (to a logarithmic scale) either side of the R10 million cost. The selected fee based on the actual project cost is thus determined by the consulting engineer. It can only be estimated by the client.
- 7. Being based on providing the normal services in all 6 stages of the assignment, this may need adjustment according to the stages which are applicable. This is done in sub-clause 4.3.6 with percentage points for each stage indicated in a table for 5 projects according to the engineering discipline and whether an engineering or building project. This sub-clause also states how the consulting engineer should be remunerated in event of cancellation or abandonment of the works.
- 8. If any additional services are required of the consulting engineer, these are listed, together with methods of remuneration in clauses 3. And 4. respectively.
- 9. Reimbursable Expenses and Costs to which the consulting engineer is entitled are dealt with in clause 4.6.

### Commentary

- 1. With the abandonment of the old "Tariffs" and "Fee scales" it is now evident that the onus now rests on the client's shoulders to accurately describe the scope of work and the project value when issuing a RFP. Today's business environment has resulted in a need to change the manner in which the financial terms of the client/consultant agreement are derived. If the consultant is required to tender a price for his services to execute a project, then the project must be sufficiently described by the client to enable the consultant to estimate accurately the cost of his resources and effort that will be required. Failure by the client to provide this enabling information will result in subsequent claims from the consultant to be paid for work he could not reasonably have foreseen.
- 2. It must be acknowledged that many clients may lack the capacity to produce the information at RFP stage described above. This cannot be a reason for the client not providing the information. Professional assistance to assemble the requisite information can be obtained by the client appointing a consulting engineer who has no interest in being a prospective tenderer, to render the help needed and if necessary train the client's staff to undertake the work in future.
- 3. It is now also evident that it is no longer possible to call for, or offer a "discount" on published single percentage fees. The consultant will use the Guideline to determine the applicable percentage fee, and this will not necessarily be the same percentage as determined by the client, so the discount cannot be applied to any particular fee. Furthermore the consultant will be using his determined fee as a benchmark, in deciding on the fee which he will quote in his tender. The quoted fee may well include a "discount" or a reduction which the consultant may make for his own commercial reasons to render his price more competitive, but it is inappropriate for the client to call for a discount.

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# APPENDIX J. USING THE CONSTRUCTION SECTOR SCORECARD TO DETERMINE THE PREFERENCE SCORE

### Introduction

The Broad-Based Black Economic Empowerment Act (No. 53 of 2003) establishes a legislative framework for the promotion of BBBEE, provides for the gazetting of transformation charters and empowers the Minister of Trade and Industry to issue codes of good practice.

The Construction Sector Transformation Charter published in Government Gazette no. 29616 provides the basis for the development of a Construction Code of Good Practice as it supports the commitment of the parties thereto to actively promote a vibrant, transformed and competitive construction sector that provides adequate services to the domestic economy, reflects the South African nation as a whole, and contributes to the establishment of an equitable society.

The Charter constitutes a shared approach reflecting targets that are visionary and contain significant stretch to facilitate the rapid transformation of the construction sector, which all sector stakeholders hold, and establishes the principles upon which BBBEE should be implemented in the sector. The Charter also establishes targets and qualitative responsibilities in respect of each principle. It applies to all stakeholders within the sector and takes cognisance of differences between Contractors and Built Environment Professionals.

The Charter applies to all enterprises that are involved in the creation, expansion, and/or maintenance of fixed assets related to residential or non-residential buildings, infrastructure, or any other form of construction works in South Africa. Each enterprise will submit an independently audited report from an accredited verification authority annually to the sector Charter Council. The report, which will be publicly accessible, must contain the enterprise's Scorecard and an account of progress in achieving the qualitative undertakings outlined in the charter.

### The Construction Sector Scorecard / Charter

The scorecard provides an objective and broad-based set of measurement indicators to measure BBBEE progress in and between construction enterprises, in different sub-sectors and in the construction sector as a whole. In its entirety the scorecard and all elements captured in the scorecard pertain to South African operations.

The scorecard contains the following:

- 1. Elements: The core elements of the charter, derived from the BBBEE Act and Codes of Good Practice issued in terms of the Act.
- 2. Indicators: The areas of measurement pertaining to an element of BBBEE
- 3. Weightings: A number on the scorecard against which an enterprise's performance in terms of a particular target will be calculated, and
- 4. Targets: Quantifiable measurement of transformational initiatives

The scorecard will, for public sector related procurement, directly determine the preference points obtained out of the potential 20 or 10 points in the 80/20 or 90/10 points system in the preferential procurement evaluation in accordance with the requirements of the Preferential Procurement Regulations pertaining to the PPPFA. To do this, the score in terms of the scorecard is used to indicate the BBBEE Status Level of the Contributor, being Level 1 to Level 9.

The score is determined using seven BBBEE Elements, with Weightings as below:

<u>Element</u>	1	Weighting
	<b>Contractors</b>	Built Environment Professionals
Ownership	25	25
Management Control	10	10
Employment Equity	10	10
Skills Development	15	20
Preferential Procurement	20	20
Enterprise Development	15	10
Socio-Economic Developmer	nt 5	5
TOTAL	100	100

The Elements and their Weightings are further broken down into Indicators such as are shown here:

Ownership Voting rights Economic interest Realisation Points

Management Control Board Executive Management

Employment Equity Senior Management Middle Management Junior Management BEP's : All management

Skills Development Training costs Learnerships Bursaries Mentorship

Preferential Procurement

Enterprise Development

Residual (Socio-economic development)

#### **BBBEE status Level of Contributor**

Each Indicator has a specific weighting and Target, whereby the enterprise is given a score for each Indicator. To be valid, the score must be certified by a SANAS accredited authority. The BBBEE status of the enterprise, after calculation of its score, is classified as below:

Level 1 Contributor – Total Score 100% and above Level 2 Contributor – Total score of 85% and above but less than 100% Level 3 Contributor – Total score of 75% and above but less than 85% Level 4 Contributor – Total score of 65% and above but less than 75% Level 5 Contributor – Total score of 55% and above but less than 65% Level 6 Contributor – Total score of 45% and above but less than 55% Level 7 Contributor – Total score of 40% and above but less than 45% Level 8 Contributor – Total score of 30% and above but less than 40% Level 9 Contributor – Total score less than 30%

Where the enterprise is in excess 50% owned by black people, the BBBEE status of that enterprise will be at the level immediately above the level at which its actual score is evaluated.

#### **The Preference Score**

In accordance with the requirements of the Preferential Procurement Regulations pertaining to the PPPFA, the Preference Score can be determined from the BBBEE Status Level of the Contributor, out of the potential 20 or 10 points in the 80/20 or 90/10 preference point system for acquisition of services, works or goods up to a Rand value of R1 million. This is shown below:

<b>BBBEE Status Level</b>	Preference Score	Preference Score
of Contributor	80/20 pref, point system	<u>90/10 pref, point system</u>
1	20	10
2	18	9
3	16	8
4	12	5
5	8	4
6	6	3
7	4	2
8	2	1
9 (Non-compl	iant) 0	0

The points in the Preference Score must be added to the points scored for Price (and Quality or Functionality if applicable) to achieve the total points for evaluation of the tender.

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### **APPENDIX K. TARGET CONTRACTS**

#### Introduction

Appendix C of the 2010 PCES Guide addresses the situation where a client is unable to provide a detailed Scope of Services and Scope of Work when inviting tenders for consulting engineering services and alternative approaches must be considered. The main reason for this is invariably the project has not yet been developed to the point where a scope can be written, and the approach of a Framework, or Term contract is followed. These contracts are discussed in Appendix C of the 2010 PCES Guide.

However there are other situations where it is not possible to write a Scope of Services and Scope of Work sufficient for the tenderer to realistically price the assignment. This is usually where the extent of uncertainty and the circumstances under which the assignment must be executed are too high to allow a realistic price to be determined. This high level of uncertainty generally applies to construction contracts, but can also apply to a consulting engineering assignment.

The alternative solution is frequently the Target Contract, which is explained in this appendix.

### The Target Cost Contract

The Target Cost Contract (often termed "Target Contract") may be defined as "a cost reimbursement contract in which a preliminary target cost is estimated and on completion of the work the difference between the target cost and the actual cost is apportioned between the client and contractor (or consulting engineer) on an agreed

basis." For the sake of convenience the party opposite the employer is assumed to be the contractor, but the same principles would govern the agreement with a consulting engineer.

Target contracts are underlain by the following principles:

- 1. In place of the traditional "master/servant" contractual relationship, target contracts require a high degree of trust and working "in partnership"
- 2. The approach by each party must be collaborative it cannot be adversarial
- 3. Financial risks are shared by the parties, incentives must be available
- 4. Savings or excesses between actual and target costs are shared on a pre-agreed basis ("Pain and Gain" provisions)

The awarded contract includes a "Schedule of cost components" which is used to compute a target price of an identified amount of the work to be done. The target price is agreed between employer and contractor, with the quantities involved being estimated as closely as possible. The contractor is paid his costs, profit and overheads monthly as work proceeds. The initial target price is adjusted for unforeseen events, except for scope changes suggested by the contractor, to arrive at a "final target cost". The difference between final target cost and the amount paid to the contractor at completion of the work is shared between the parties in agreed proportions. The difference between target price and price for work done to date is usually divided into increments. Specific target share percentages are assigned to each increment. The share percentages are set so as to give the contractor reasonable incentive to keep costs down and strive to "beat" the target price and share in the saving. At the same time the share percentages in event of the cost of the work exceeding the target price should not be such as would cause significant losses to the contractor.

#### **The Contract Structure**

As mentioned, the target contract requires a high degree of collaboration between employer and contractor with shared objectives and full disclosure of information. Traditional contract conditions do not fit easily into this contracting environment. The New Engineering Contract (NEC) form of contract, being a more modern form, is more suitable, as it includes mechanisms to manage and mitigate risks which could affect programme, entail extra costs, or impair quality. The NEC contract places the onus on both employer and contractor to give early warning of any perceived risk, attend a risk reduction meeting and agree on extent of the event to be compensated for, and the valuation thereof.

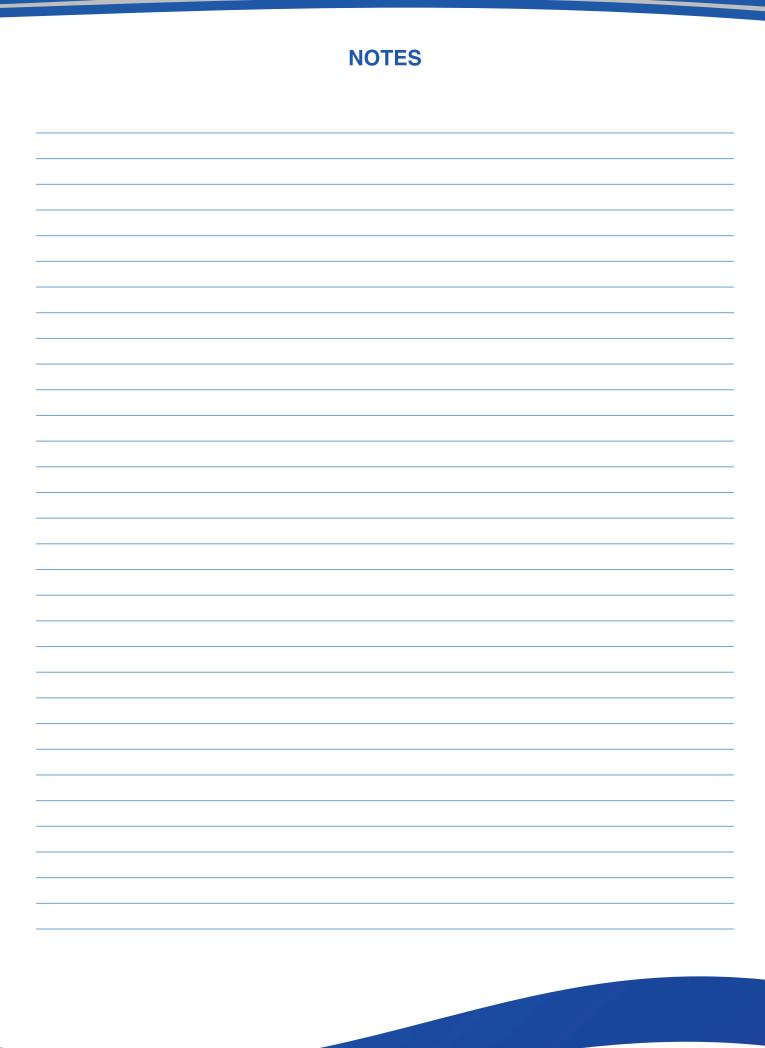
### The Role of the Consulting Engineer

As observed above, the target contract comes to the fore when the client or employer is unable to provide a clear scope of services and scope of work. This can frequently apply in the consulting engineering environment, where the project has still to be identified and feasibility or viability studies are required, and the consulting engineer is commissioned to undertake such activities. The method of remuneration most often used is payment on a time and cost basis, but while this may carry a budget it is usually without a target cost, and the target contract could offer a viable alternative.

However it is in the construction arena, where the work to be done cannot be clearly identified or quantified, that the target contract will come into its own, and clients are more likely to be faced with this situation than they would be in the consulting arena. For the target contract to perform successfully, a competent consulting engineer, with his professional and impartial approach should be employed by the client to administer the construction contract. He is able to apply the administrative and project management skills which the target contract demands.



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