

Estimating & Tendering

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Course Overview

- Tendering fundamentals
- CIDB Standard for Uniformity
- Preferential Procurement regulations of 2017
- Draft Public Procurement Bill
- Pricing of the tender document
- Estimating vs Tendering
- Tender Strategy
- Tender programme & execution plan
- Tender Mark-up
- Risk & opportunity management
- Escalation
- Tender Finalization
- Completion of Tender document

Tendering Fundamentals

- The 3 Main Role Players
 - The Employer
 - The Contractor
 - The Employer's Agent, e.g. Engineer, Principal Agent, Project Manager

Tendering Fundamentals

- **The Employer** – the “master” in the contract, owner of the “thing” & pays for the thing in terms of the contract
- **The Contractor** - the other party to the contract, contracted to build the “thing” for payment of money within a period of time
- **The Employer’s Agent** – employed by the Employer as his agent to design and/or administer the contract. Acts always in the best interests of the Employer.
- The Employer solicits tender offers from Contractors/Service Providers using standard methods of procurement and the Contractor/SP makes an formal offer which the Employer is free to accept.

CIDB Standard for Uniformity

- CIDB Standard for Uniformity in Engineering & Construction Works contracts – August 2019/2015
- Establishes requirements for engineering and construction works contracts aimed at bringing about standardisation and uniformity in construction contracts documentation, practices and procedures.
- Reference documents applicable to this standard:
 - FIDIC conditions of contract – full suite
 - GCC for construction contracts
 - JBCC for building works – major & minor works
 - NEC 3 – full & short form

Note: Latest edition of the referenced document should be used at all times with minimal amendments

CIDB Standard for Uniformity

PPPFA Regulations 2017

- SANS 10845-3: Construction procurement – Part 1: processes, methods & procedures
- SANS 10845-3: Construction procurement – Part 2: Formatting & compilation of procurement documentation
- SANS 10845-3: Construction procurement – Part 3: Standard Conditions of tender
- SANS 10845-3: Construction procurement – Part 4: Standard conditions for the calling for expressions of interest
- Department of National Treasury – regulations pertaining to the industry and holds the funding
- PFMA & MFMA
- AG's Office – annual audits
- Draft Public Procurement Bill

CIDB Standard for Uniformity

- The standards are framed around the South African Constitutional imperatives for procurement, namely that the system is fair, equitable, transparent, competitive and cost effective and, subject to applicable legislation, may promote objectives additional to those associated with the immediate objective of the procurement itself

CIDB Standard for Uniformity

- Preparation of Procurement documents:
 - Require tenderers to submit particulars sufficient for the employer to evaluate their tenders and to assess their status, capabilities and capacities to perform the contract;
 - Set out, in a clear and unambiguous manner, the criteria by which tenders are to be evaluated;
 - Define the risks, liabilities and contractual obligations of the parties to the contract;
 - Define the nature and quality of construction works to be provided in the performance of the contract.


CIDB Standard for Uniformity

- Solicitation of tender offers
 - Standard Procurement procedures & tender evaluation methods:
 - Negotiation procedure with a single tenderer
 - Competitive selection procedure
 - Competitive negotiation procedure
 - Standard methods of procuring different categories of engineering & construction works contracts:
 - Design by Employer
 - Design & build
 - Develop & construct
 - Management Contractor

Contracting strategies

STRATEGY		DESCRIPTION
Increasing risk passed to the contractor	Construction management	Design supplied by the employer. A management contractor is appointed to manage trade contractors.
	Traditional build only	Design supplied by the employer. Contractor does the construction. Usually a re-measurable bill.
	Develop and construct	Employer provides a concept design. Contractor does detailed design and builds it.
	Design and build (turnkey) (EPC)	Employer provides an output spec (a brief). Contractor does all the design and construction. Usually a lump sum contract.
	Design-build-operate (EPCM)	Employer provides an output spec. Contractor does the design & construction, and operates the facility. eg. Sewer and water treatment works
	Private finance initiative (PFI)	Similar to design-build-operate, but the contractor provides finance. PPP = public-private partnership BOT = build, operate, transfer

Pricing strategies

STRATEGY		DESCRIPTION
Decreasing risk passed to the contractor 	Lump sum	<ul style="list-style-type: none"> The Contractor tenders a lump sum for the Works Activity schedule: scope of work broken down into activities, each one is priced as a lump sum All risk is passed on to the Contractor Pay a price premium to pass on this risk
	Unit price	<ul style="list-style-type: none"> Bill of quantities Amount paid for each item = rate X quantity The quantities are re-measurable The risk of under-estimated quantities is removed from the Contractor Takes more effort to prepare, but may get a lower price than a lump sum contract
	Cost reimbursable	<ul style="list-style-type: none"> The Contractor is paid his actual costs plus a fee Low risk for the Contractor
	Target cost	<ul style="list-style-type: none"> The Contractor is paid on a cost reimbursable basis Difference between the final cost and a target cost is shared between Contractor and Employer

CIDB Standard for Uniformity

- Evaluation of tenders on functionality
 - Must be stated in the tender data & criteria must be objective
 - Must specify points for each criteria or sub-criteria
 - Minimum qualifying score for functionality
 - A tender that fails to meet the min. qualifying score is not an acceptable tender
 - Each tender that meets the min. score must be evaluated further in terms of price & preference together with any objective criteria

CIDB standardised format

Documents relating to the tender

Part T1: Tendering procedures

T1.1 Tender notice and invitation to tender	Informs tenderers on the nature of the tender.
T1.2 Tender data	States what the applicable conditions of tender are, and gives the variables. eg. Date for tender briefing meeting, closing date & place for tenders, alternative offers, etc. Describes the procedure for evaluating tenders.

Part T2: Returnable documents

T2.1 List of returnable documents	List of all the documents that the tenderer must submit with his tender. eg. Programme, H&S plan, CV's of key personnel...
T2.2 Returnable schedules	A set of documents that the tenderer must complete, eg. List of subcontractors, BEE declaration...

Documents relating to the contract to be awarded

Part C1: Agreements and contract data

C1.1 Form of offer and acceptance	Formalises the legal process. Signed by employer and contractor.
C1.2 Contract data	States the applicable condition of contract (GCC, JBCC, FIDIC, NEC...) Provides variations and additions to it. These documents lay down the risks, liabilities and obligations of the contracting parties, and the procedures for administering the contract.

Part C2: Pricing data

C2.1 Pricing instructions	Instructions to the tenderer on how to price this doc.
C2.2 Bill of quantities / activity schedule	Used for pricing the tender.

Part C3: Scope of Work

C3 Scope of Work	Scope of works, site facilities for the contractor, technical specifications.
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Part C4: Site information

C4 Site information	Description of the site, geotechnical information, rainfall information, existing services, etc.
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CIDB standardised format

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T2.2 Returnable schedules

A set of documents that the tenderer must complete, eg. List of subcontractors, BEE declaration...

Tender Notice

- Tender Invitation
 - Advertisement in the Public Media or Tender Bulletins
 - Expression of Interest
 - Negotiation
- Pre-qualified tenders
 - Generally used in Large/Technical Tenders
 - Threshold to pre-qualify
- Brief description of project
- Where tender documents can be sourced

CIDB standardised format

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Tender Data

- Tender Data contains the contract specific data
- Tender briefing/clarification meeting
 - Compulsory/non compulsory
 - Why Attend?
- Tender Responsiveness
 - To be stipulated in the Tender Data
- Tender Closing/Opening of tenders
- Tender Validity/Clarification period
 - Offer must remain valid for a time period stated in the Contract Data – shall not exceed 12 weeks.
- Extension of tender validity period??

Tender Data

- Must state procedure for the evaluation of tender
- May include functionality as an eligibility criteria acceptable
- Tender evaluation methods:
 - Price and preference
 - Functionality, price and preference
- Corrections to tenders
 - Unit rate remains & line total corrected, except where there is an obvious decimal point error
 - Correct the tender total
 - Corrected tender price to be communicated to the tenderer.
 - Tenderer can either accept or withdraw their tender.
 - Employer can reject the tender if tenderer does not accept the corrected price

CIDB standardised format

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Returnable Documents

- The following schedules and forms are to be completed and submitted with tender:
 - Returnable schedules
 - Form of Offer (& Letter of Acceptance)
 - Contract Specific Data provided by the Contractor
 - Schedule of Quantities

CIDB standardised format

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Returnable schedules

- Tenderer is required to complete each and every schedule
- Used in the evaluation of the tender
- Do not form part of the eventual contract

Returnable Schedules

- **RETURNABLE SCHEDULES**

- A Certificate of attendance at clarification meeting
- B record of addenda to tender documents
- C compulsory enterprise questionnaire
- D certificate of authority
- E plant & equipment
- F experience of tenderer
- G proposed subcontractors
- H key personnel
- I deviations and qualifications
- J contractor's health and safety declaration
- K tax clearance certificate
- L tenderer's bee verification certificate
- M schedule of alternative tenders
- N tenderer's participation in job creation using local labour

Preferential Procurement Regulations

- Issued by National Treasury in 2017, as amended & to be further amended.
- Regulations apply to all organs of state, i.e. Government departments, Municipalities, SOE's
- Identification of:
 - preference point system,
 - designated sector
 - pre-qualification criteria
 - objective criteria
 - subcontracting

Preferential Procurement Regulations

- Preference Point System
 - Organ of state must stipulate in the tender documents the preference points system applicable to the tender, i.e. 80/20 or 90/10
 - Specify any pre-qualifying criteria
 - Tenders to be evaluated on functionality
 - Qualifying tenders to be evaluated further in terms of price/preference & any other objective criteria
 - 80/20 for contracts up to R50m
 - 90/10 for contracts > R50m
 - Preference points to be based on BBBEE scorecard
 - If no BEE certificate, then tenderer score based on price only
 - Contract must be awarded to tenderer scoring the highest points
 - If price is not market related, cancel tender or negotiate a market related price with the highest scoring tenderer

Preferential Procurement Regulations

- Designated sector
 - The DTI may designate a sector, sub-sector, industry or product in accordance with national policies
 - Stipulate a minimum threshold for local production & content
 - Organ of state must advertise the tender with a specific condition that only tenders complying with the above will be considered
 - Where there is no designated sector, an organ of state may include as a specific condition of tender that only locally produced goods or services will be considered
 - A tender that fails to meet the minimum threshold will not be accepted

Preferential Procurement Regulations

- Prequalification criteria
 - Organ of state must state in the tender document if the tender will be evaluated on functionality
 - Evaluation criteria must be objective
 - The points for each criteria & the minimum qualifying score
- Objective criteria
 - Can stipulate only certain BBEEE level tender
 - Local employment categories
 - Targeted subcontractors from local business forums registered on the National Supplier database, but cannot stipulate entity

Preferential Procurement Regulations

- Subcontracting
 - For contracts >R30m, an organ of state must apply subcontracting to advance designated groups (if feasible)
 - Tender must be advertised with a condition that the successful tenderer to subcontract a min. of 30% of contract value to an EME or QSE
 - Organ of state to make available the list of Suppliers registered on a database approved by National Treasury from which the tenderer must select a Supplier
 - Subcontracting to be approved by the organ of state
 - Main contractor may not subcontract more than 25% to any other enterprise that has a BEE scorecard equal or higher than tenderer
 - All procurement processes must be done according to Supply Chain rules and regulations, competitive bidding or quotations

Preferential Procurement Regulations

- What does this mean for Contractors?
 - Intended consequences:
 - Transformation of Industry
 - Provide opportunities to the previously disadvantaged
 - Improve BBBEE scorecard thru ED
 - Unintended consequences:
 - Lawlessness (the emergence of business forums), resulting in delays & cost over-runs

Draft Public Procurement Bill

- Public Procurement Act 2020
- Its aim is to create a single regulatory framework for public procurement in line with S217 of the Constitution by:
 - Establishment of a Public procurement regulator
 - Defining the functions of Provincial treasuries & institutions
 - Sets out general procurement requirements
 - Measures to protect the integrity of the procurement process
 - Regulation of preferential procurement – BBEEE Act
 - Regulates the bidding process
 - Envisages a different SCM for infrastructure procurement & the establishment of a procurement unit
 - Regulates the infrastructure delivery management & procurement

CIDB standardised format

Documents relating to the contract to be awarded

Part C1: Agreements and contract data

C1.1 Form of offer and acceptance	Formalises the legal process. Signed by employer and contractor.
C1.2 Contract data	States which condition of contract applies (GCC, JBCC, FIDIC, NEC...) Provides variations and additions to it (particular conditions of contract).

Part C2: Pricing data

C2.1 Pricing instructions	Instructions to the tenderer on how to price this tender.
C2.2 Bill of quantities / activity schedule	Used for pricing the tender.

Part C3: Scope of Work

C3 Scope of Work	Scope of works, site facilities for the contractor, and technical specifications. (NEC - "Works information")
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Part C4: Site information

C4 Site information	Description of the site, geotechnical information, rainfall information, existing services, etc.
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Form of Offer and Acceptance

- Formalises the legal process
- Form of Offer must be signed by a person authorized by the tendering entity – failure to sign invalidates your tender
- The tender amount to be filled in by tenderer in words and figures
- Letter of Acceptance to be signed by the Employer
- Pro formas

CIDB standardised format

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Contract data

- The contract data is a vital part of a contract
- It defines all the variables in the contract, such as:
 - contract period & defects liability period
 - retention
 - penalties (R per day...)
 - insurance requirements, etc., etc.
- The contract data comprises:
 - The applicable condition of contract (normally this is *named* but not bound into the tender documents)
 - Information provided by the Employer
 - Information provided by the Contractor
 - Particular conditions of contract – amendments to standard clauses or new clauses

Sample Contract Data

Information by Employer

- The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:
- **Clause 1.1.1.13:**
- The Defects Liability Period is **12** months.
- **Clause 1.1.1.14:**
- The time for achieving Practical Completion is, inclusive of the 14 day period referred to in Clause 5.3.2 below, and inclusive of non-working days referred to in Clause 5.8.1 below, but exclusive of special non-working days.
- **Clause 1.1.1.15:**
- The **Employer** is
- **Clause 1.2.1.2:**
- The address of the Employer is:.....

Sample Contract Data

- **_Clause 1.1.1.16:**
- The **Employer's Agent** is.....
- **Clause 1.2.1.2:**
- The address of the EA is:.....
- **Clause 1.1.1.26**
- The Pricing Strategy is a re-measurement contract
- **Clause 3.1.3:**
- The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of.....
- **Clause 5.3.1:**
- The documentation required before commencement with Works execution is:
 - (1) Health and Safety Plan (Refer to Clause 4.3)
 - (2) Initial programme (Refer to Clause 5.6)
 - (3) etc.,etc.
- **Clause 5.3.2:**
- The time to submit the documentation required before commencement with

Sample Contract Data

- **Clause 5.4.2:**
- Access to and possession of the site shall not be exclusive to the Contractor insofar as the provisions of Clause 4.8 apply, and where ongoing use by the general public is required.
- **Clause 5.8.1:**
- The non-working days are Sundays.
- The special non-working days are:
 - (1) All gazetted public holidays falling outside the year end break.
 - (2) The year end break commencing mid December and ending on early January.
- **Clause 5.12.2.2:**
- No extension of time will be granted in respect of any delays attributed to normal climatic conditions. The number of days quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work.

Sample Contract Data

- _January 5 days; February 6 days March 5 days
- April 3 days May 1 days June 1 days
- July 1 days August 1 days September 1 days
- October 3 days November 4 days December 4 days
- **Clause 5.13.1:**
- The penalties for failing to complete the works is R5000 per calendar day:
- **Clause 5.14.1**
- The requirements for achieving Practical Completion are.....
- **Clause 5.16.3:**
- The latent defects period is **10** years
- **Clause 6.2.1:**
- The security to be provided by the Contractor shall be a performance guarantee of 10% of the Contract Sum.
- **Clause 6.5.1.2.3:**
- The percentage allowance to cover overhead charges is **10%**

Sample Contract Data

- **Clause 6.8.2:**
- *Add the following to Clause 6.8.2:*
- The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.
- The value of “x” is 0,15.
- The values of the coefficients are:
- $a = 0,20$ $b = 0,25$ $c = 0,50$ $d = 0,05$
- The base month is one month prior to the month in which the tender closed.
- **Clause 6.10.1.5:**
- The percentage advance on materials not yet built into the Permanent Works is **80%**.
- **Clause 6.10.3:**
- Interim payments to the Contractors shall be subject to a retention by the Employer of an amount of **5%** of the said amounts due to the Contractor, with no limit. A guarantee in lieu of retention is not permitted.

Sample Contract Data

- **Clause 8.6.1.5:**
- In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:
- xxxxxxxxxx
- **Clause 10.5.1**
- The determination of disputes shall be by a standing adjudication board or ad-hoc adjudication
- **Clause 10.5.3:**
- The number of ad-hoc Adjudication Board Members to be appointed is 1(one).
- **Clause 10.7.1:**
- The determination of disputes shall be by arbitration.

Sample Contract Data

- **Part 2: Data provided by the Contractor**

- **Clause 1.1.1.9:**

- The name of the Contractor is

.....

- **Clause 1.2.1.2:**

- The address of the Contractor is

- Physical

Postal

- Address:

Address:

-

- Telephone :

Fax:.....

- email :

- **Clause 6.8.3: Variation in the cost of special materials**

- SPECIAL MATERIALS:

- XXXXXXXX

CIDB standardised format

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Pricing Instructions

- Pricing instructions
 - Contains the detailed Pricing Instructions
 - Fixed or re-measurable Bill of Quantities
 - Applicable contract specifications
 - Items are measured net per drawings
 - No allowance made for waste
 - Rates & prices to be fully inclusive
 - Unbalanced Rates

Pricing Instructions

- Hierarchy in pricing an item in the boq:
 1. Item prefixed with a 'B' – refer Project particular specification
 2. Standard numbering – refer standard specifications
 3. Drawings
 4. In the absence of 1 or 2 – state assumptions in schedule of deviations/qualifications

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Bills of Quantities

- The Bill of Quantities:
 - Provide information of the quantities of work
 - Enable tenders to be prepared efficiently and accurately
 - Used for evaluation of work executed
 - Different specifications divide the work into separate items in the boq, e.g. SANS 1200, Colto.

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Scope of work

- The contract is for the successful delivery of the entire Scope of Works and not the bill of quantities.
- This section includes:

A description of the scope of the contract	<i>It is vital that the scope is clearly understood at tender stage, so as to understand the risks/opportunities that will arise during construction.</i>
Project specifications	List the technical specifications that are applicable, eg. SANS 1200, COLTO , etc.
Particular specifications	Specs written specifically for this contract, eg. <ul style="list-style-type: none">• Environmental Management spec• Health and Safety spec• Project specific specs
Other information	eg. Site facilities for the Contractor.

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Site Information

- Geographical information
- Site investigation report
- Site specific conditions
- Climatic & rainfall data
- Drawings

Pricing of the Tender

- The costing of items in the bill of quantities is made up of the following:
 - Direct Costs:
 - Indirect costs or P&Gs
 - Risk allowances

Pricing of the Tender

- Direct Costs are made up of the following:
 - Plant and Equipment
 - Labour
 - Materials
 - Subcontractor
 - [Worksheet Examples.xlsx](#)

Pricing of the Tender

- Subcontractors:
 - 3 types of subcontractors:
 - Domestic – used where main contractor does not have the resources
 - Selected – specialist contractor e.g. piling
 - Nominated – normally a provisional sum
 - Quotations to be obtained at tender stage
 - CPG subcontractors – imposed on the main Contractor
- Main contractor to develop a “symbiotic” relationship with his subcontractors

Pricing of the Tender

- Sources of Productivity rates:
 - Publications e.g. Merkels handbook
 - Equipment Supplier catalogues
 - Historical data from own site controls

Pricing of the Tender

- Indirect Costs:
 - Common site costs
 - Head Office costs
 - All costs not covered under Direct Costs
 - [Indirect Costs Template.xlsx](#)

Pricing of the Tender

- Risk Allowances:
 - The standard forms of contract appropriate risks between the Parties
 - The Employer has the right to shift risks on to the Contractor
 - So risks are to be priced accordingly in the event they should occur

Pricing of the Tender

- Estimating software commonly used in industry:
 - CCS (Construction Computer Software)
 - Build Smart (actual costing package)
 - EMWIN Systems
 - WINQS
 - Plus a large selection on the internet
- Start using the technology as more and more Employers are requesting a full rate breakdown with the tender.

Estimating vs Tendering

- Estimating:
 - Rates & prices from historical data or a guess
 - No risk assessment
 - List prices used for material & plant rates
- Tendering:
 - Accurate rates & prices including a thorough assessment of all the project risks
 - Formal offer which could become legal & binding

Tender Strategy

- A Bid-winning strategy entails the following:
 - Detailed analysis of the project risks & opportunities
 - Maximization of tender points – tender price and optimization of BEE points
 - Well thought out execution plan
 - Resourcing, views on pricing, discounting, etc.
 - All of the above to be documented
- Tender strategy to be transferred to the contract team

Tender Programme & Execution Plan

- Tender Programme
 - Engineer's programme is only a guide
 - Tenderer to produce his own programme based on his plan
 - Use the tender programme to price indirect costs accordingly
 - Generally used for negotiations
- Execution Plan
 - When drawing up programme, must have a game plan of how you're going to attack the project
- Cashflow forecast
 - Prepare a forecast of the cashflow based on tender programme

Tender Mark-up

- Mark-Up
 - Percentage applied to cost rates to cover head office costs, profit & risk.
 - Factors that have an effect on the percentage:
 - Current commitments
 - Market conditions
 - Risk appetite

Risk Management

- Risk management in construction projects is designed to plan, monitor and control those measures needed to prevent exposure to risk
 - Identify the hazard
 - assess the extent of the risk
 - Provide measures to control the risk
 - Manage any residual risk
- Risks must be identified at every stage of the project's life (initiation, planning, implementation, closure)

Risk Management

- For Contractors, the identification of Risks starts during the tender process:
 - Contract documentation
 - Contract Data
 - Particular Conditions of Contract
 - Scope of Work
 - Drawings – buildability?
 - Project Specifications
 - Site Inspection
 - Site conditions
 - Availability of services
 - Pricing
 - Quantities - take off key quantities
 - Project Specifications

Risk Management

- Tender finalization
 - Programme
 - Capacity
 - Competition
 - Previous Experience with Employer/Engineer
- List all risks, then rate probability of risk happening.
- Depending on risk appetite, price in all the risks in accordance with the contract

Opportunity Management

- Every tender has opportunities that must be carefully assessed before submitting a tender
- Should not tender if there are no opportunities on the contract
- Examples:
 - Poorly prepared schedule of quantities v Scope
 - Programme
 - Previous experience with Employer/Engineer
 - Future project extensions

Risk Management

- Distribution of the Mark-Up
 - Front-end vs back-end loading
 - Under-billed quantities
 - Overbilled quantities
 - Rate Only items

Escalation

- Escalation
 - Compensation for increased costs, not profit
 - Role of STATSSA
 - Allowance for Under-recovery
- Fixed price contracts
 - Should only be used in short term contracts < 12 months

Tender Finalization

- Tender team to set a time & date for finalizing of a tender
- Responsible director/contracts manager to present programme & execution plan
- Mark-up to be agreed
- [TENDER FINALIZATION.xlsx](#)

Completion of Tender Documents

Documents to be submitted with tender:

- Returnable documents
- Schedule of quantities
- Signed Form of Offer
- Contract Data by Contractor
- Deviations from tender

Summary and Close

THANK YOU

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