

Modern Approach to Project Contracting in Desalination Technology

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Objective

- Current trends in Privatization and Independent Power and Water Production are influencing traditional methods of Contracting.
- More fit to Performance Guarantees Oriented methods.
- Workshop will provide Engineers in the Industry with innovative approaches to Contracting Strategies that will enhance budget and schedule delivery

Contracting Scope of Work

- Setting the project objectives and constraints
- Selecting a proper project delivery method
- Selecting a proper contract form / type
- Contract administration practices

Steps on Contracting

- Identify Contract Packages
- Prepare Request for Quotations.
- Float and receive the Quotation (Technical & commercial) to Contractors.
- Perform Technical Bid Evaluation (TBE) and Commercial Bid Evaluation (CBE).
- Providing Recommendation to the client after performing the TBE & CBE.

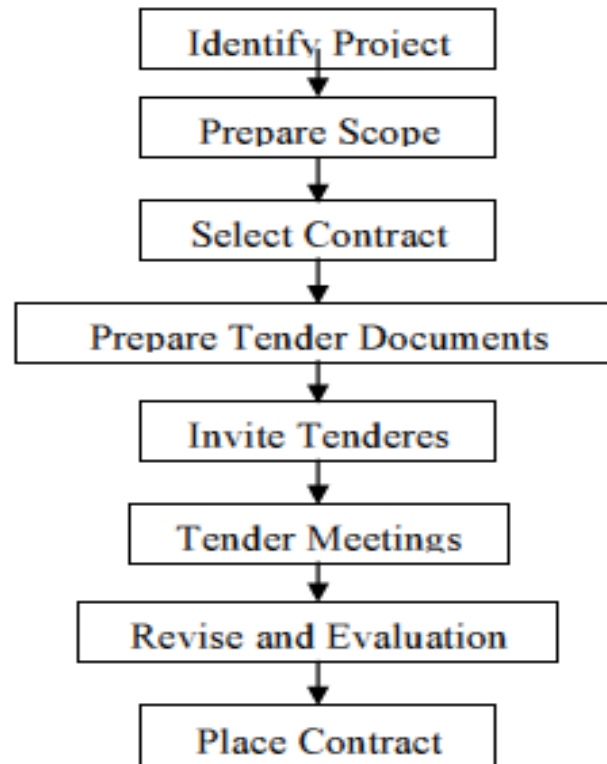
Roles and Responsibilities

- Providing clear identification of the role of the parties is paramount in executing contracting activities.
- A matrix is prepared to identify roles and responsibilities of the Client, Consultant, Contractor(s), and Sub-Contractor(s).
- Typically there is a split in the scope of work which is shared between these parties and it is important to document these roles to ensure that tasks are not duplicated or missed

Project Delivery Method

- Client identify the requirement for the Project Delivery, whether
- EPC,
- EPCm, PMC or other delivery.
- The project delivery is a key is allocating and managing project risks

Contracting Process



Project Constraints

- Availability of funds.
- Availability of contractual incentives.
- Method of tendering.
- Project location.
- Target dates of the project.
- Possibility of design changes.
- Availability of resources.
- Seasonal working.
- Number of contractors willing or able to tender

Contracting Methods

- *Lump-sum Turnkey contract*
- *Admeasurement contract*
 - *Bill of Quantities Contract*
 - *Schedule of Rates Contract*
- *Cost-reimbursable contract (cost-plus contract)*
- *Target cost contract*
- *Time and material (T&M) contracts*

Schedule of Rates Contract

- :It contains inaccurate quantities of work, possibly with upper and lower probable limits.
- Therefore, it is common for separate rates to be quoted for labor, plant, and materials.
- The contract price is derived by measuring the man-hours, plant-hours and the quantities of materials actually consumed, and then pricing them at the tendered price.
- This contract is best suitable for repetitive works

Cost-reimbursable contract (cost-plus contract)

- The contractor is reimbursed for actual cost plus a special fee for head office overheads and profit, no special payment for risk.
- Payment may be made monthly in advance.
- The contract involves a high level of flexibility for design changes. Final price depends on changes and extent to which risks materialize.
- The contractor must make all his records and accounts available for inspection by the client or by some agreed third party.
- The fee may be a fixed amount or a percentage of actual costs. This contract has no direct financial incentives for the contractor to perform efficiently.
- It may be used when it is desirable for design to proceed concurrently with construction and when the client wishes to be involved in contract management.

Target cost contract

- Cost targets may be introduced into cost-reimbursable contracts.
- In addition to the reimbursement of actual cost plus percentage fee, the contractor will be paid a share for any saving between target and actual cost, while the fee will be reduced if actual cost exceeds the target.
- The target figure should be realistic and the incentive must be sufficient to generate the desired motivation.
- Specified risks can be excluded from the tendered target cost. When these occur, the target cost is adjusted accordingly and the client pays the actual cost incurred by the contractor.
- The target may also be adjusted for major changes in work and cost inflation

Time and material (T&M)

contracts

- T&M contracts are a hybrid type of contractual arrangement that contains aspects of both cost-reimbursable and fixed-price-type arrangements.
- T&M contracts resemble cost-type arrangements in that they are open ended, because the full value of the arrangement is not defined at the time of the award.
- T&M contracts can grow in contract value as if they were cost-reimbursable-type arrangements.
- Conversely, T&M arrangements can also resemble fixed-unit arrangements when, for example, the unit rates are preset by the buyer and seller, as when both parties agree on the rates for the category of "senior engineers."

Time and material (T&M) contracts

- Most appropriate when the buyer wants to be more in control.
- Also used in an emergency to begin work immediately when a scope of work has not yet been completed.
- Not possible at time of placing contract to estimate extent or duration of the work, or anticipated cost, with any degree of confidence

Lump-sum Turnkey contract

- A single tendered price is given for the completion of specified work to the satisfaction of the client by a certain date.
- Payment may be staged at intervals on the completion.
- The contract has a very limited flexibility for design changes.
- The tendered price may include high level of financing and high risk contingency.
- Considerable risk is placed with the contractor,
- This contract may lead to cost cutting, trivia claims, or bankruptcy.
- Contract final price is known at tender

Admeasurement contract

- Items of work are specified in Bills of Quantities or Schedule of Rates.
- The contractor then specifies rates against each item.
- The rates include risk contingency.
- Payment is paid monthly for all work completed during the month.
- The contract offers a facility for the client to introduce changes in the work defined in the tender documents.
- The contractor can claim additional payment for any changes in the work content of the contract.
- Claims resolution is very difficult because the client has no knowledge of actual cost or hidden contingency.
- Tender price is usually increased by variations and claims.
- Two forms of admeasurement contract are usually used: bill of quantities and schedule of rates.

Bill of Quantities Contract

- Tenderers enter rates against each item of the estimated quantities of work.
- The quantities are re-measured during the course of the contract, valued at the tendered rates and the contract price adjusted accordingly.

Contract Administration

- *Contract documents*
- *Conditions of contract*
- *Special conditions of contract*
- *Construction claims*

Contractor Selection

- Selecting key personnel and organizations that will participate in a project is a major step for the owner and can mean the success or failure of a project.
- By large, the competitive bidding process has been the main vehicle for contractors to obtain jobs.
- The process is required by law for public projects, which has been the largest percentage of all projects, except in emergencies such as war or natural disasters. Under this process, a simple quantitative criterion is used to award the bid to the “lowest responsible bidder”, thus potentially obtaining the lowest construction cost.
- The process, however, has its drawbacks, including:
 - (1) overlooking important criteria such as contractor’s experience and strength;
 - (2) potentially causing construction delays and problems if the contractor bids below cost to win the job; and
 - (3) contributing to adverse relationships between the owner and the contractor.
- The competitive bidding process encompasses three main steps: **announcement, bid preparation and bid evaluation**

Contractor Selection

- To announce for a project, the design needs to be completed and a bid package prepared with all design information.
- general call is announced to bidders or to a limited invitation of a list of pre-qualified contractors.
- Through the limited invitation, the owner organization can reduce potential construction problems by avoiding unknown contractors who intentionally reduce their bids to win jobs, particularly if the project requires a certain experience.
- Owners, therefore, need to maintain a list of qualified contractors with whom they had successful experience or by advertising a call for pre-qualification

Request for Quote (RFQ)

- Contract Administrator shall prepare the RFQ letter.
- A Request for Quotation is intended to provide a complete commercial and technical offering by vendor approved for the project of specific materials or equipment.
- The RFQ will contain the information of the project, the schedule when the bid should be provided back and Acknowledgment form.
- The RFQ shall be submitted to the all the bidders which are approved from the client on the bidders List which shall be a part of the MR.
- The use of electronic system or submitting of hardcopy of the RFQ shall be the way of submission of the RFQ package to the bidders.
- Upon receiving the RFQ the bidders has to send a signed Acknowledgment form within 3 days.
- Receiving and responding to bid clarifications shall be captured in the bid clarification log
- There are two types of bid openings which can be used, Standard Bid opening or Sealed Bid opening, it shall be recommended by Client which type of bid opening they prefer

Technical Bid Evaluations (TBE)

- The Contract Administrator shall coordinate with all the responsible project Discipline engineers for TBE through a TBE format approved by Client.
- The responsible discipline engineers shall compile the complete TBE review and perform a final check and get it approved by Project Manager (PM).
- The Contract Administrator shall communicate to the bidders if there are technical comments to clarify.
- If required a meeting between Consultant and the bidder shall be arranged to clarify all the technical comments.
- All the Technical Comment shall be managed in the TBE form

Commercial Bid Evaluation (CBE)

- Contract Administrator shall prepare the CBE of the commercial offer received by the bidders.
- Contract Administrator shall maintain CBE form
- Contract Administrator shall conduct a thorough review of bidder's commercial offer in compliance with the RFQ package requirements.
- Contract Administrator shall route the CBE form for review and approval by Procurement Manager and Project Manager.
- Final negotiation, selection and placing of the P.O will be done by Client

Award Recommendation

- A letter is to be issued to the client with the recommendation from the Consultant with the bases of the TBE, CBE and the delivery schedule of the material. This Letter of Recommendation will briefly elaborate the strategy that has been followed for that particular RFQ, followed by Conclusion of TBE & CBE with justification

Thank you

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