

## Paper 32

# Conservation of Water through Procurement of Quality Goods & Services in the Implementation & Maintenance of Projects in Water Sector

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### INTRODUCTION

National Water Supply & Drainage Board (NWS&DB) being the principal authority providing safe drinking water in Sri Lanka holds the responsibility to increase the pipe borne water supply coverage in the country. Recent studies on capital cost of water infrastructure development for new water supply projects indicates investment for producing one cubic metre of treated water is in the range of Rs. 250,000.00 to Rs. 400,000.00. (Reference 1).

Thus, it is of National Importance to develop strategies for conservation of water by increasing efficiency of water usage by creating public awareness among consumers and minimize the avoidable water losses due to leakages etc. by procurement of quality water fittings and adopting proper plumbing practices when installing them. In 2006, Greater Kandy Water Supply Project (GKWSP) promoted procurement of quality Pipes & Fittings and employed qualified contractors for pipe laying by introducing well documented specifications and standards in tender documents. Accordingly, different techniques have been applied for technical requirements in the tender documents. Some of the techniques adopted in GKWSP are stated under "Methods" of this paper.

### HIGHLIGHTS

- A comparison was made of the results of two tendering systems; i.e. the Two Envelope system and the Traditional Single Envelope system
- It is proved that two envelope system was successful in achieving procurement of quality goods, pipes, fittings and contract services enabling the reduction of water losses previously experienced.

### METHODOLOGY

In 2006, GKWSP commenced modifying the standard tender documents used by NWS&DB following typical tender documents issued by NPA and ICTAD and specimen tender documents issued by donor agencies. Certain qualification requirements and technical requirements extracted from above documents, along with internationally recommended methods together with new conditions specifying use of quality products and executing quality works have been introduced in these tender specifications. Some conditions have been modified based on bidders feedback given during Pre-Bid meetings. In 2010, it was identified that obtaining quality products and selecting qualified and able contractors is difficult when financial bids were received together with technical specifications in the single envelope method. Generally, inferior products are cheaper than superior high quality products.

In single envelope method generally accepted criteria is to accept the lowest bid. Therefore, GKWSP opted to invite tenders by adopting "Two Envelope System" to procure Goods, Works as well as Services. In this method, bidders were requested to enclose all technical requirements in the first envelope named "Technical Proposal" which will be opened first. Then second envelope containing "Financial Proposal" of those bidders who are recommended after the evaluation of the technical proposal will be opened next and evaluated for award. Relevant Technical Requirements and Financial



Proposal requirements introduced by GKWSP are produced below.

## **Technical Requirements**

### ***Introducing Quality Standards in the specifications and adhering to these specifications***

Standards and specifications for each product have been updated regularly and "Product Certificates" have to be submitted with the bid to check whether each product conforms to the specified standards and specifications. In the case of imported products action has been taken to verify the authenticity of the submitted Product Certificates through the Sri Lankan Embassy in the country of manufacture of product.

### ***Requirement of End User Certificates from Sri Lanka or from developed countries***

End user certificates confirm the satisfactory performance of a product after usage for a specified period. Bidders are required to submit end user certificates with the bid to prove the quality of product they intend to supply. The certificates will be verified by the tender evaluating committee and bidders have been warned to refrain from submitting forged documents. Preference Factors will be given in the financial evaluation of bids for bidders who submit such certificates in the first instance.

### ***Sample Testing for pre-qualifying products and Testing random samples at delivery point based on consignment size***

Samples of products which are required to be submitted with the bid will be subjected to endurance tests specified in the tender document. Bidder's representatives will be allowed to witness these tests. Results of these tests will be given to bidders to give feedback to their manufacturers if these tests fail. When endurance tests are performed, preference factors will be given in the financial evaluation to bidders whose products produce better results in the tests than the requirement in the tender specifications. Random samples from a consignment will be tested for specifications given in the tender and if the samples fail whole consignment will be rejected as stated in the tender.

### ***Checking availability of after Sales Service facilities***

After sale facilities are the most important criteria to be evaluated for the smooth functioning of a bidder's organization. Availability of technically qualified staff to attend to a case of malfunctioning of particular equipment supplied by them and their response time period is the main factors to be evaluated when selecting a supplier. A questionnaire has been introduced in the bid document for checking these criteria.

### ***Considering Operation & Maintenance costs in the bid evaluation process***

Operation and Maintenance cost may be a large component of the cost of a particular product. Therefore, bidders need to declare their operation and maintenance cost after the warranty period in the bid document. A separate bill has been introduced in the BOQ for this purpose for evaluation of the bidder's offer.

### ***Obtaining manufacturers declaration for the delivery schedule***

Inability of manufacturers to meet the agreed delivery schedules in supplying materials is one of the major problems experienced during procurement of goods. In order to ensure that the manufacturers are aware about the delivery schedules and their confirmation of it, manufacturers' are required to submit a declaration with the bid stating their ability to meet the delivery schedule. Contact details of an English Speaking representative of the manufacturer has to be submitted with the bid to ensure the delivery schedule.

### **Ensuring utilization of contractor's Key Technical Staff**

Quality of the work depends on the availability of qualified and experienced Technical Staff to execute any contract. Therefore, GKWSP introduced a BOQ item for making monthly payments to key technical staff of the contractor and a penalty deduction from the contractor for non-deployment of specified Technical staff as specified will be made from the monthly bill. This compels the contractor to deploy suitable staff to maintain quality of work.

### **Facility to bid in foreign currency**

In order to share the risk due to inflation and devaluation of currency, bidders have been allowed to bid in foreign currency for imported items and exchange rates applicable for evaluation and payments have been specified clearly in the bid to minimize the contractor's risk enabling him to quote realistic rates.

### **Milestones**

Milestones have been introduced in the tender documents and bidders are requested to provide their programme based on same. Some penalty criteria have been introduced in the bid to apply where contractor fails to achieve the agreed milestones. Thus contractor is alert to completion of work according to programme.

### **Financial Requirements**

#### **Introducing separate BOQ items for each and every activity**

GKWSP developed a system to provide a breakdown of for each and every sub activity of work of a BOQ item instead of quoting for the BOQ item such as providing safety requirements, shoring of pipe trenches, Cost for Contractor's Key Technical Staff, Road reinstatement, repair and maintenance of alternative roads and landscaping work etc.

## **RESULTS AND DISCUSSION**

Comparison details of the contracts are given below.

No.	Description	Number of Contracts				% of contracts which completed within contract period with specified quality
		Sample size	Completed within contract period / On schedule	Fail to complete within contract period	Terminated	
<b>Supply Contracts</b>						
1	based on <u>single envelope system</u>	15	4	10	1	27%
2	based on <u>two envelope system</u>	9	7	2	0	78%
<b>Work Contracts</b>						
3	based on <u>single envelope system</u>	15	5	9	1	33%
4	based on <u>two envelope system</u>	8	5	2	1	63%

Above results show that % of successfully completed contracts is higher when inviting bids based on "Two Envelope System" than on "Single Envelope System". This study has revealed that inviting bids in "Two Envelope System" can ensure "maximizing economy, timely completion and quality in procurement resulting in least cost together with the high quality;" the first objective stated in Government Procurement Guidelines.

## CONCLUSION

It can be concluded that adopting "Two Envelope System" for selection of quality products / capable contractors / suppliers by first evaluating the Technical Proposal prior to evaluating the Financial Proposal ensures procurement of quality goods, works and services.

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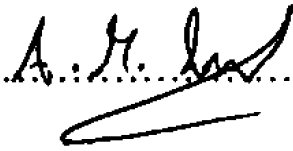
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