

Proposal for Supply, installation, testing and commissioning of electromechanically operated, automatic organic waste converter machine (300 Kg/day) at the Identified Locations in Bidhannagar Municipal Corporation Areas under SWM cluster project-II

This is regarding initiation of a decentralized waste management system in Bidhan Nagar Municipal Corporation areas by way of installing organic waste converter machines in 36 different locations as identified by BMC. PricewaterhouseCoopers, the Transaction Advisor, duly engaged by SUDA with the assignment of scientific development of Technical Feasibility Report, drafting of tender documents and assisting the client in bid process management has designed the scheme which has duly been incorporated in the TFR submitted by them for SWM Cluster Project-II and duly approved by the Technical Committee (SWM Task Force) in its meeting on 21.11.2019. (TFR placed at flag A)

Process in Brief

Organic waste composting in decentralized manner is an effective way of minimizing municipal solid waste. The objective of this technology is to treat the organic waste in situ for the bulk organic waste generators, such as – big housings, residential blocks, shopping centre, markets etc. This process converts all major types of organic waste including kitchen waste, fruit, fruit peels, vegetables, vegetable peels, non-bulky garden waste like dry leaves and small twigs etc. The system gradually turns the output to compost. This is recommended under clause 15(t) of SWM Rule 2016 for adoption and implementation. The entire composting process is natural & biological. The decomposition is done by microbes / micro-organisms which thrive in high temperature. The compost that is formed has to be removed once in a month, which can be used for the plants in the garden and for landscaping purposes.

Features

It is recommended in the TFR, developed by PWC-TA, to install 300 - 350 kg/day organic waste treatment plant at pilot level at 36 different locations in Bidhannagar. The technical specification of the plant has been approved by the Technical Committee (SWM task force) in its meeting on 21.11.2019. (Minutes is placed at flag B)

Total waste to be catered by 36 OWCs is = $36 \times 0.3 \text{ MT} = 10.8 \text{ MT}$ per day which is 3.73% (approx) of the total wet waste generated in Bidhannagar Municipal Corporation.

Proposed Sites with Area Requirement

The land parcels required for the decentralized facilities are available and under possession of the ULB. The details of the proposed land parcels is placed at flag C. The per unit land requirement is not more than 50 sqMtr. BMC needs to ensure space provision in each site.

Scope of Work

Considering the benefits of the organic waste composting system and availability of composting machine with specification as suggested in market, it is proposed to float e-tender for procurement of organic waste composting machines with O&M support initially for 5 years keeping the scope of work as envisaged in the RfP document, duly drafted by PwC and approved by the Technical Committee. As indicated in the RfP, the scope for bidders includes supply, installation, commissioning and complying relevant Clauses of SWM Rule 2016 as well as operations, maintenance and repairs through O&M services under contract (5 years renewable). Salient features of their scope are given below:

- The bidder is required to Supply and install, electromechanically operated, automatic organic waste converter machine (300 Kg/day) with testing and commissioning. The processing unit will process the entire wet garbage and convert the same into rich organic manure / compost. The system should have scope to accept a variety of raw materials.
- The firm will have to submit the make and Model of the system to be installed by them.
- The system should be fully automatic and ensures hassle free operation in the longer run. However, in the event of failure of motors, company repair person should be made available within 48 hours.
- The manure generated in the process need to be weed-free and rich in organic carbon contents.
- All fabrication, erection works including electrical works (nearby power point and RCC platform for keeping the machine will be provided) shall be carried out by the supplier. The contractor, after installation of the system, will test the system for its functioning and submit a certificate in this regard.
- The contractor will have to test the manure so generated from the plant in NABL accredited laboratory and submit the certificates.
- The by product- compost should be certified under Fertiliser Control Order (FCO) standard
- The supplier will submit the complete design, structural layouts, electrical drawings, etc. and get it approved before execution of the work.

The O&M scope includes:

- Daily operation of OWC
- Daily/regular collection and removal of compost produced from the premises
- Test certification of compost quality and buyback of compost.

Bidding Parameters

The two bid evaluation system is adopted in the RfP where financial bids of only the bidders who are technically found qualified shall be opened and processed for evaluation. Financial bids shall be evaluated as per the methodology given below:

- Least cost bidder will be determined as follows:
- Total price quote = A + (B-C) wherein,

A = Price bid quoted under item 1

B = Monthly quoted amount of AMC/O&M (item 2) x 60 months

C = Monthly manure generation in kg x quoted rate of manure (item 3) x 60 months

Role of ULB

For effective functioning of OWC units ULBs will have to ensure certain aspects. A draft letter addressing Commissioner BMC to confirm the following is placed in file at flag D for approval.

- 1) It is understood the land parcels required for the decentralized facilities are available either under the possession of BMC or different Housing Societies. Here NoCs of the respective land owner need to be provided for land parcels possessed by authorities other than BMC.
- 2) It is to ensure that in a particular site no major shifting of utilities is needed for installation of the proposed OWC unit.
- 3) Minimum assured quantum of waste equivalent to at least 90% of total capacity of each unit, is to be provided daily to the decentralized units.

- 4) Source segregation of the waste stream coming to the decentralized units is mandatory. The ULB should notify mandatory source segregation in the wards where these OWC units will be installed, if not already done and ascertain the same from the respective bulk generators wherever applicable.
- 5) The ULB has to develop a collection and transportation mechanism for handing over required quantum of segregated wet waste to the operator at the decentralized facility location on regular basis. This has to be planned in consultation with the concerned micro planning agency along with sustained IEC activities and capacity building of the conservancy workers.

Cost Assessment

The indicative capital expenditure and operational cost as worked out by PWC-TA in the TFR and duly appraised by Technical Committee (SWM Task Force) is as follows. Vendor will buy back entire compost generated every month from the installed facilities at the rate per ton declared at the time of bidding itself. The monthly buy back amount will be deducted from the monthly O&M payment to the vendor.

Item	Rate (in lakh)/unit
Capital cost	11.6
O&M cost/annum	1.8
Total capital cost (for 36 unit)	417.6
Total O&M cost (for 5 yrs)	324.0

Considering the above we may proceed for getting administrative approval of the proposed scheme,

If approved, this proposal may be placed for getting kind concurrence of the department.

Submitted

[Signature]
Executive Engineer
SWM Cell, SUDA

Add. Mission Director, SBM (U)

Proposal above regarding administrative approval of the referred projects may kindly be approved.

3.12.19.

Director

RfP document is placed in file for kind approval. If approved, SUDA may float this RfP once administrative approval is accorded. SBM funds may also be proposed for this scheme. *[Signature]* 3/12/19

This was discussed. AA&FS may be issued and SUDA may float RfP. *[Signature]* 3/12/19

3/12/19

HMC, UD&MA

Proposal at NSP 03 may kindly be referred to. In line with subsequent guidance extended by the Principal Secretary for modification of payment terms and certain other clauses in the RfP document developed by PwC, the Transaction Advisor engaged for drafting of tender documents for SWM cluster project-II and proposal from BMC seeking change of sites, number and capacity of OWCs, a revised note is placed for kind consideration.

Modified features

BMC has now proposed to install OWC with 1 TPD processing capacity in 6 locations and OWC with 0.3 TPD capacities in 4 locations. As such 7.2 TPD wet waste could be processed through development of these facilities.

The sites within the area of Bidhannagar Municipal Corporation that have been finalized by BMC for installation of OWCs are as follows: -

List of locations for installation of 6 (six) OWCs with capacity of 1 TPD

Sl. No.	Locations and area catering to	Ward Nos.	Coordinates
1.	AD vat catering to waste from AD block	41	22°35'58.2"N 88°24'28.2"E
2.	SW - 7 - waste from IA market and entire IA block	37	22°34'28.54632" N 88°24'34.65828"E
3.	Baishakhi Vat - waste from Baishakhi area	30	22°36'00.7"N 88°25'27.9"E
4.	EE Vat - waste from EE block	32	22°34'45.0"N 88°25'34.1"E
5.	UCO Bank - waste from sector V and adjoining area under BMC	34	22°35'18.7"N 88°24'38.2"E
6.	VidyaDhari School, Opposite to Shamoli Abason	38	22°34'59.80548" N 88°24'6.77412"E

List of locations for installation of 4 (four) OWCs with capacity of 300 kg/day

Sl. No.	Locations and area catering to	Ward Nos.	Coordinates
1.	BJ Vat - waste from BJ block	29	22°35'28.67748"E 88°25'32.1078"E
2.	BF-CF Vat - waste from BF and CF blocks	31	22°35'41.49672"N 88°25'7.6332"E
3.	Near Kendriya Vidyalaya No. 1, Near EB Block - catering to waste from EB block	40	22.585740 "N, 88.405824 "E
4.	AA Vat - catering to AA block	41	22°35'58.2"N 88°24'28.2"E

Scope of work of the bidder as envisaged in the earlier proposal may remain unchanged.

Modified cost components

BMC has accepted specifications of OWCs as shown to them by the TA. The indicative capital expenditure and operational cost following the revised specification is as follows.

Item	Rate in lakh/unit	Units	Total (INR lakhs)
Capital Cost - 1 tpd	20	6	120
Capital cost - 300 kg/d units	15	4	60
O&M Cost per annum - tpd unit	2.5	6	15
O&M Cost per annum - 300 kg/d units	1.2	4	4.8
Total capital cost (10 units)			180
Total O&M cost for 5 years			99

Payment Terms as modified in the present RFP document is as follows:

A. For Supply, Installation, Testing and Commissioning:

- (ii) The contract price payable to the contractor by BMC is proposed to be paid in milestone-based instalments as per the following schedule:-

Sl. No.	Milestone	Payment
1.	On completion supply, installation, testing and commissioning of all the OWCs, including completion of all fabrication, erection and electrical works, and on achieving Commercial Operations Date	60%
2.	On completion of each Quarter of the 1 st Contractual Year	3% (12% for 1 st Contractual Year)
3.	On completion of each Quarter of the 2 nd Contractual Year	2.5% (10% for 2 nd Contractual Year)
4.	On completion of each Quarter of the 3 rd Contractual Year	2% (8% for 3 rd Contractual Year)
5.	On completion of every Quarter of the 4 th Contractual Year	1.5% (6% for 4 th Contractual Year)
6.	On completion of every Quarter of the 5 th Contractual Year	1% (4% for 5 th Contractual Year)

B. For Operation & Maintenance:

The O&M charges shall be payable in each quarter of every contractual year. For this purpose, the contractor should produce documentary proof including inspection reports duly approved and signed by Executive Engineer of BMC for each of the Sites.

C. For Buy Back of Compost:

The contractor will have to agree to buy back 100% of the compost generated from the project at quoted and agreed rates, exclusive of taxes.

The price payable by the contractor for the compost shall be deducted by BMC from the amount payable for the O&M Charges as provided hereinafter.

Performance Bank guarantee – the performance bank guarantee shall be submitted for the two phase – **PBG 1)** 10% of the contract value of supply, installation, testing and commissioning, and **PBG 2)** 10% of the total O&M contract value. The PBG 1 shall be released after first 3 months of the successful operation and maintenance and after submission of the PBG 2.

Role of BMC

BMC is proposed to be the Tender Inviting Authority and should play the following role in this project-

- (i) BMC shall provide/ensure space of 50-sq. mt for 0.3 TPD units and 100 sq. mt. space for 1 TPD units, in the indicated locations (as specified in the list) for installation of the machine(s) and make it available to the bidder for installation within one week of the execution of the contract agreement.
- (ii) BMC will hand over the project site on an as-is-where-is basis, free from encumbrances, for execution of the project. The BMC will not provide any equipment or vehicle for the project. All equipment and machinery required by the successful bidder shall be arranged by the bidder at his own cost.

- (iii) BMC shall facilitate necessary clearances, permits, approvals, authorizations, and no objection certificates, which are required by the bidder to execute the project and obtain water, sewage connection and power connection.
- (iv) BMC shall permit the bidder to carry out the project till the conclusion of the Contract Period or any extension thereof.
- (v) BMC shall ensure collection and transportation of segregated biodegradable waste to each of the individual sites with organic waste to the tune of at least 80% of total capacity of each unit.
- (vi) BMC will ensure all access roads, boundary walls, drainage.
- (vii) BMC will ensure general security of the area to protect the equipment and the people involved in its operations.
- (viii) BMC will ensure that any additional waste (beyond estimated daily quantity) would be treated on a pro rata chargeable basis at agreed rate by the bidder.

Bidding Parameters

The two bid evaluation system is adopted in the RfP where financial bids of only the bidders who are technically found qualified shall be opened and processed for evaluation. Financial bids shall be evaluated as per the methodology given below:

- Least cost bidder will be determined as follows:
- Total price quote = A + (B-C) wherein,

A = Price bid quoted under item 1
 B = Monthly quoted amount of AMC/O&M (item 2) x 60 months
 C = Monthly manure generation in kg x quoted rate of manure (item 3) x 60 months

Considering the above, administrative approval of the proposed scheme may kindly be accorded following the draft tender document attached herewith with **flag mark - A**

The entire cluster-II project may be proposed under SBM for sanction and sharing of funds required for the project.

The draft Contract document as developed by Fox & Mondal is attached for necessary vetting by Law Cell of the Department. **(Ac flag B)**

If approved, BMC may float e-RfP on getting concurrence to the proposal above.

Adj Mission Director, SBM(U)

Proposals at 'x' above may kindly be approved

Def 4/2/19

[Signature]
4/11/2020.

K.T.O.

[Signature]
FA

x

[Vertical line]

~~Pr. Secretary
UD & MA Dept.~~

Notes per page :

1. Draft Tender Documents examined.
 - 'Refund of Earned Money' [Sl. 7 of Data Sheet - Page 3.
This clause needs to be modified in line with the recently issued F.D. Memo NO. 441-F(Y), dt. 27/01/2020.
 - Rest of the documents are O.K.
2. Draft Agreement [Annexure 'D'] examined.
 - Article 1 (Definitions) :-
The term 'Contractor' - not defined.
 - Article 2.1.3. [Page - 39] :-
Clause (b) appears misleading and detrimental to the interest of BMC. This may be reviewed and modified, if necessary.
 - Draft Agreement may be verified by the Law Cell
3. After approval of the Draft Tender Documents and Draft Agreement, formal proposal for acceding Adm. Approval and financial sanction may pl. be processed in the Departmental file of UD & MA Deptt.

R. S. Saha

L. K. Chakrabarti
Director, SUDA

03/02/2020.

[Signature]
10/11/2020

PROPOSAL FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTRONICALLY OPERATED AOWC MACHINE (300KG/DAY) AT IDENTIFIED LOCATION IN BMC AREA UNDER SWM CLUSTER-2.

SUDA-606/2019.

Received this file being no. SUDA-606/2019 from the office of the Hon'ble Principal Secretary on this day at 11.15 a.m. From the written note dated 09.02.2020 it appears that the draft agreement which has been prepared for "SUPPLY, INSTALLATION, TESTING AND COMMISSIONING, OPERATION AND MAINTENANCE OF 6(SIX) 1 TPD AND 4(FOUR) 300 KG/DAY ORGANIC WASTE CONVERTER MACHINES AT 10(TEN) SITES WITHIN THE CORPORATION AREA OF BIDHANNAGAR MUNICIPAL CORPORATION" in between BMC and contractor is required to be examined.

Over this issue seen and examined the said draft agreement and it appears that the following matters are to be included in the said agreement:-

- 1) In the definition clause (Article 1), the term "contractor" is to be defined specifically.
- 2) In the Dispute Resolution clause (13.2) and (14.1), the name of the Court preferably Commercial Court, 24PGS(N), West Bengal is to be included.
- 3) At the same time the clause (b) of (Article 2.1.3.) at page 39 may be removed.

Remaining articles and clauses are found correct.

However, the financial matters are required to be examined by the Financial Advisor of this department.

Submitted for kind perusal.

Debanjan Dasgupta
Chief Legal Advisor

11.02.2020

[Signature]
11/11/2020

Hon'ble
Pr. Secy.
U.D.&M.A.

JS(B-MA)

Now the BMC may be informed regarding the observations.

19.02.2020

*Director
SUDA*

AD (SM)

Necessary modifications on RFP and agreement- ~~document~~ document, may as suggested, be ~~made~~ communicated to TA and BMC

sd/- 18/2/20

*SE / SWM
A.E/SWM*

20.02.2020.

pl. take n.a accordingly. 24.2.20