Annexure – I

Supply, Installation & Commissioning of STP (Sewage Treatment Plant) of Capacity 10 kLd (kilolitre per day)

End Use:-

A Sewage Treatment Plant will be installed by the proper combination of its various components and treated water will be obtained. Capacity of STP will be 10 kilolitre per day. Further, treated water must meet the requirements for its reuse for agricultural purposes. Standard of treated water will be determined by lab-testing. PVC pipe of 350 m in length from the final treated tank will also be laid.

Detailed Specification:- The various components must be contained in the STP system. Details of individual items are given below:

1. Capacity of STP = 10 kLd
2. Screen Chamber (wire mesh)
3. Oil & Grease Trap with ¾ inch diameter pipe
4. Biological Tank
   a. Dimension: 1m x1m x 1m
   b. Arrangement of Air Requirement for proper mixing with air-blower is mandatory.
   c. It must have Epoxy Coating
   d. Material: Mild Steel
5. Air Blower
   a. Amoumt : 1 no.
   b. 1 hp & 1440 rpm
6. Secondary Settling Tank
   a. Dimension: 1m x1m x 1m
   b. Material: Mild Steel
7. Pressure Sand Filter (PSF)
   a. Height of the Vessel: 54 inch
   b. Diameter of the vessel: 13 inch
   c. Multiport Valve (fiber make), diameter of the outlet: 1 inch
   d. Thickness of the material of the vessel: 25 mm
   e. Material: Fiber
   f. Arrangement for Backwash and Back-flushing is mandatory.
   g. Flow must occur uniformly in the top part of the Vessel.
   h. Flow must occur uniformly in the bottom part of the Vessel.
   i. Flow in PSF must be in down to top direction.
   j. For item f and g, proper arrangements are mandatory.
8. Activated Carbon Filter
   a. Height of the Vessel: 54 inch
   b. Diameter of the vessel: 13 inch
   c. Multiport Valve (fiber make), diameter of the outlet: 1 inch

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d. Thickness of the material of the vessel: 25 mm (25mm)
e. Material: Fiber
f. Arrangement for Backwash and Back-flushing is mandatory.
g. Flow must occur uniformly in the top part of the Vessel.
h. Flow must occur uniformly in the bottom part of the Vessel.
i. Flow in PSF must be in down to top direction.
j. For item f and g, proper arrangements are mandatory.

9. Sludge Collection Tank: There will be three chambers. (Civil works are required)
   a. Dimension of each chamber: 1m x 1m x 1m
10. Air Diffuser
   a. Size of the hole: ¾ inch
   b. No. of diffusers: 20
   c. Placements of Diffusers with proper Configurations is mandatory.
11. Activated Carbon Filter material: 75 kg
12. Filter Media: 150 kg
13. FAB Media: 1 cubic meter
14. Pipeline Fittings (integration of all units): 1 lot
15. Installation and Commissioning is mandatory with all the arrangements such as back wash, back flush etc.
16. PVC pipe laying work :
   a. Diameter of the pipe: 1.5 inch
   b. Length of the pipe: 350 m
   c. All the Fittings and connections will be provided by vendor.
   d. Pipe will be laid below the Ground by vendor.
   e. Excavation will be done by CoEFM.
17. pH meter of Standard make with (i) proper sensor, (ii) accuracy of 2% FSD (iii) LED Display and (iv)Range (0-14).
18. Pre-Filtration Tank (2000 Litre)
   a. Quantity: One
   b. Color: White
   c. Capacity : 2000 Litre
   d. Material: HDPE (Four layer), ribbed
19. Final Treated Tank (2000 Litre)
   a. Quantity: One
   b. Color: White
   c. Capacity : 2000 Litre
   d. Material: HDPE (Four layer), ribbed
20. Disinfection at pre-filtration tank : One dosing pump appropriate for 10 kLd STP
21. Civil (construction) work is required for item no. 9 and it has to be done by the vendor. Other civil work (required for covering of pumps, motors etc) also will be done by the vendor.

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Scope of Supply & Incidental Services:-

1. Vendor shall supply the complete system (as mentioned on previous pages) fulfilling all the technical requirements at the site i.e. CSIR-CMERI-CoEFM, Ludhiana, Punjab.
2. Vendor must also provide support for successful installation & commissioning (including civil/construction work) of the STP by means of deputing trained personnel at the site location.
3. Vendor must inform in advance, the requirements at site from client's side to ensure timely and successful installation & commissioning of STP.
4. Civil works for Sludge Collection Tank, cover for motor & pumps and air blower will be done by the vendor.
5. Laying of PVC pipes (of length 350 m) from the final treated tank will be done by the vendor.
6. Warranty of at least one year on the components of STP must be given.

Acceptance Test:-

After delivery of the mentioned components of STP, vendor must also ensure the successful installation & commissioning of the system by means of deputing trained personnel at the site location. Vendor must provide outlet design parameters (BOD, COD, TSS and Oil & Grease). The vendor must also ensure that sewage is being treated to the standard level. At least, standard level is the standard of reuse of the treated water for the agricultural purposes. Following acceptance tests will be carried out on the installed STP:

1. Each of the independent components will be tested individually for their functionalities in terms of reduction of BOD and other sewage parameters.
2. Functionalities of the total system (i. e. STP) will be tested by test results of treated water.

Qualification Criteria:-

1. Vendor must provide outlet design parameters (BOD, COD, TSS and Oil & Grease).
2. Vendor must ensure his technical understanding of working principal of each component.
3. He must provide block-diagram of all the components of STP. Details of important parts components (sub-components) must be explained. Vendor must explain in detail of how the required functionalities and specifications will be fulfilled by the proposed system.
4. Vendor must have experience in installing such STP (capacity of 10 kLd at least) with Government/Private organizations in last three years. Vendor must submit relevant documentary proof (PO, Certificate etc) with the technical bid as an evidence of his past experience.

29/9/19

24/09/19