

Biogas plant Capacity 1 MT/day Technical Specifications & BoQ					
Sr. No.	Description of item	Qty	Unit	Rate	Amount
A	Construction (civil work)				
1	Processing room (brick work) 3m X 2.5m X 3m (Breadth, height and length respectively) (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:-1:5, Plastering: - 1:4) with suitable smaller platform for mixers and waste delivery system on it. Flooring of the room should be of Shahabad stone and channel for waste delivery should have glazed tiles. The room should be provided with two windows with aluminum shutters and glass and a good solid door with all amenities. The exhaust fan is to be fitted in this room. There will be two CFL units and one wall mounted revolving fan.	1	No	Annexure I	
2	Pre-digester should have a volume of 12 m ³ (dimensions may vary depending on the site but volume should remain constant) with a centre wall having 1.5' opening at the bottom for free slurry movement (Excavation, 9" Rubble Soling, P.C.C :- 1:3:6, Brick Work :-1:5, Plastering :- 1:4) and aeration grid in both the compartments to provide aeration at three levels of equal intervals starting at 1' above the bottom level. The predigester will be covered by a slab of 4" thickness RCC with one manhole (2' X 2') cast in MS (5mm) and having GI vent pipes of 10' X 2" o.d. The vent pipe will be connected by a flexible pipe and emptied into predigester at the digester side. The seal for all the openings should be airtight. The mixer slurry will be delivered directly into predigester. The delivery of the slurry in the predigester will be through airtight opening and will not release any foul odour in the surroundings.	1	No		

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3	<p>Main digester will have a volume of minimum 40 m³ (dimensions may vary depending on the site but volume should remain constant) and with three partition walls (Excavation, 9" Rubble Soling, P.C.C :- 1:3:6, Brick Work :-1:5, Plastering :- 1:4) as described in our drawing. Water seal around the main digester will be as per the drawing. The levels will be as per the drawing. An outlet cement pipe of 9" OD will be provided as per the drawing and will be connected to a chamber 4' X 4' X 4' (Excavation, 9" Rubble Soling, P.C.C :- 1:3:6, Brick Work :-1:5, Plastering :- 1:4).</p> <p>The chamber will deliver the manure slurry in manure pits through a channel.</p>	1	No		
4	<p>Manure pits: There will be 2 manure pits of 1.5m X 1.5m X 1.5m (Excavation, 9" Rubble Soling, P.C.C :- 1:3:6, Brick Work :-1:5, Plastering :- 1:4) as per the drawing. All the pits will have a filtration system of fine sand <0.2mm (layer of 100mm), coarse sand 0.6mm(100mm) and gravel 2-3mm (200mm) with drains connected through suitable pipes to an underground water tank (Excavation, 9" Rubble Soling, P.C.C :- 1:3:6, Brick Work :-1:5, Plastering :- 1:4) of 3000L capacity and having a MS cover (5mm sheet). The manure pits are to be covered with steel mesh using proper channel supports to avoid any sagging.</p> <p><i>All cement structures are to be painted with cement paint and MS parts other than dome with green oil paint.</i></p>	1	No		
5	Balloon room: 5M X 4M X 3M room The walls of this room will be of cement sheets on 7m X 5m X 1m double brick wall with shahabadi stone flooring. No electrical connections in the balloon room.	1	No		
A	Total Cost For civil works				1,639,137.32
B	Mechanical parts				
1	Mixer with a capacity of 1 MT/hour fitted with 5 HP motor (1 No.) and a SS-304 platform (5' X 2.5' X 1.5') tapering to a height of 2'	1	No	150,000.00	150,000.00
2	Compressor (2HP)	1	No	50,000.00	50,000.00
3	Water pump 1 HP	2	No	7,500.00	15,000.00
4	Slurry pump 2HP	1	No	50,000.00	50,000.00
5	A gas holder fabricated in MS (5mm sheet) with suitable reinforced structure and coated with fiber paint on outside and epoxy painting on inside will be placed in water seal before commissioning of the project.	1	No	250,000.00	250,000.00

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6	Electric panel with 15 ampere (3 No.), 5 ampere (6 No.) sockets and 5 switches for tube lights, fans etc. Mixers should be provided with L&T switches to avoid tripping of power. These switches will be suitable mounted for easy and safe operations.	1	No	50,000.00	50,000.00
7	Gas meter Actaris Make 2.5m ³ /hour (2 No.) to be connected on-line	2	No	5,000.00	10,000.00
8	Gas blower (Twin lobe type) delivering gas at 8-10 m ³ /hour at 50 mbar pressure at the user end	1	No	60,000.00	60,000.00
9	Gas pipe line 50m (3" id X 15m, 2" id X 20m, 1" id X 15m)	LS	No	50,000.00	50,000.00
10	Gas stove (2 No.) with 5 burners and gas consumption rate of 2m ³ /hour	2	No	7,500.00	15,000.00
11	Weighing scale for 1-100 Kg	1	No	10,000.00	10,000.00
12	A gas balloon of 50 cubic meter capacity	1	No	50,000.00	50,000.00
B	Total Cost For Mechanical works				760,000.00
C	O & M cost for one year			150,000.00	150,000.00
D	Total Project Cost (A+B+C)				2,549,137.32
E	If biogas is to be converted to electricity, gas generator and scrubbers will be needed. The budget for 10 KVA generator and accessories will be			600,000.00	600,000.00
F	Total budget for biogas plant of 1MT/day capacity and generation of power (D+E)				3,149,137.32
	Deliverables:				
	1) Daily processing of 1 MT of waste				
	2) Generation of 60-80 cubic meter biogas which can generate 90 to 120 KW power. It can light 60 street lights of 150 W for 10 hours.				
	3) Generation of 80 Kg good quality manure daily.				
	4) Gains to the environment by stopping escape of methane				
	NOTE: The item rates and cost are used only for reference and are subjected to vary based on market situations and timely updates in DSR.				

Biogas plant Capacity 5MT/day Technical Specifications & BoQ					
Sr. No.	Description of item	Qty	Unit	Rate	Amount
A	Construction (civil work)				
1	Processing room (brick work) 7m X 3m X 5m (Length, height and breadth respectively) (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering: - 1:4) with suitable smaller platform for mixers and waste delivery system on it. Flooring of the processing room should be of Shahabad stone and channel for waste delivery should have glazed tiles. The roof will be of 4" RCC slab. The room will have two windows (1.5m X 2m) provided with aluminum grill and glass on opposite walls for good ventilation. The door should be two paneled and wide enough to facilitate the trouble free movement of the machinery and waste material. Two exhaust fans and two wall fans will be provided and adequate lighting using CFL will be provided.	1	No	Annexure II	
2	Pre-digester (2 No.) should have a volume of 25m ³ each (dimensions may vary depending on the site but volume should remain constant) with a centre wall having 3' opening at the bottom for free slurry movement (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) and aeration grid (using 0.75" GI pipes of TATA class) in both the compartments to provide aeration at three levels of equal intervals starting at 1' above the bottom level. The pre-digester will be covered by a slab of 4" thickness RCC with two manholes (3' X 3') cast in MS (5mm) and having GI vent pipes of 10' X 2" O.D. The vent pipe will be connected by a flexible pipe and emptied into pre-digester at the digester side. The seal for all the openings should be airtight. The mixer slurry will be delivered through a cement pipe of 3 to 6' X 6" diameter in each of the pre-digester at 1m below the top level. The delivery of the slurry in the pre-digester will be through airtight opening and will not release any foul odor in the surroundings.	1	No		

3	Chamber joining predigester with main digester: A chamber of 6' X 4' X 4' will be constructed in bricks between predigesters and main digester. The slurry will flow from top of each predigester into this chamber and the chamber will be connected to main digester at two places using 6" diameter cement pipes of suitable length so as to deliver the slurry 9" above the bottom of main digester. The cement pipes entering into the main digester will be flushed to the wall of the main digester. The chamber will be covered with 3" thick airtight MS cover and a suitable handle.	1	No
4	Main digester will have a volume of minimum 210m ³ (dimensions may vary depending on the site but volume should remain constant) and with three partition walls (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, RCC M25, Plastering: - 1:4) as described in our drawing. Water seal around the main digester and the levels will be as per the drawing. An outlet cement pipe of 9" OD will be provided as per the drawing and will be connected to a chamber 4' X 4' X 4' (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:-1:5, Plastering :-1:4).	1	No
5	Manure pits: The chamber will deliver the manure slurry in manure pits through a channel. There will be 4 manure pits of 4m X 4m X 1.5m (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) as per the drawing. All the pits will have a filtration system of fine sand <0.2mm (layer of 100mm), coarse sand 0.6mm (100mm) and gravel 2 – 3 mm (200mm) with drains connected through suitable pipes to an underground water tank (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) of 10,000 liter capacity and having a MS cover (5mm sheet). The manure pits are to be covered with steel mesh using proper channel supports to avoid any sagging. <i>All cement structures are to be painted with cement paint and MS parts other than dome with green oil paint.</i>	1	No
6	Balloon room: 7m X 5m X 6m to be constructed using metal sheets raised on 1m X 1m X 1m brick wall (45cm thick) and necessary PCC work for flooring. The room should be rodent proof. There will be two small windows at the top on opposite sides for ventilation. There will not be any electric connection within the room.	1	No
7	Generator room: 10' X 8' X 8' in brick work with two windows for ventilation and wide door with shutter to facilitate the passage of gen-set and other machine parts. The flooring should be of shahabadi stone on PCC work.	1	No

A	Total Cost For civil works				1,639,137.72
B	Mechanical and electrical equipment cost				
1	Mixer with a capacity of 1 MT/hour fitted with 3-5 HP motor with one Ss Table (6' X 1.5' X variable height from 3' to 2' towards mixer end	2	No	110,000.00	220,000.00
2	Compressor (2HP)	1	No	40,000.00	40,000.00
3	Water pump 1 HP	2	No	10,000.00	20,000.00
4	Solar water heater 500L/day capacity with suitable water storage tank and hot water tank to be mounted for giving maximum efficiency in an aesthetic manner	1	No	100,000.00	100,000.00
5	Slurry pump 2HP	1	No	30,000.00	30,000.00
6	A gas holder fabricated in MS (5mm sheet) with suitable reinforced structure and coated with fiber paint on outside and epoxy painting on inside will be placed in water seal before commissioning of the project	1	No	700,000.00	700,000.00
7	Electric panel with 15 ampere (3 No.), 5 ampere (6 No.) sockets and 5 switches for tube lights, fans etc. Mixers should be provided with L&T switches to avoid tripping of power. These switches will be suitable mounted for easy and safe operations.	1	No	100,000.00	100,000.00
8	Gas meter Actaris Make 2.5m ³ /hour (2 No.) to be connected on-line	2	No	25,000.00	50,000.00
9	Gas pipe line 20m (2" id X 20m)	1	No	10,000.00	10,000.00
10	Weighing scale for 1-100 Kg	1	No	5,000.00	5,000.00
11	Neoprene gas balloon of capacity 80 cubic meter	1	No	200,000.00	200,000.00
12	Wall mounted fans 2no. (for processing room)	2	No	2,000.00	4,000.00
13	Exhaust fans 2No. (for processing room)	2	No	1,500.00	3,000.00
14	50 KVA NATURAL GAS Gen-set incorporating Water Cooled Gas Engine COUPLED TO : Reputed make Alternator rated at 40 KVA, 415 V, Mounted on common under base & includes following <ul style="list-style-type: none"> • Oil Pressure Gauge, Ammeter, Water Temperature Gauge, RPM cum Hour-meter, starter switch , toggle switches and indicator lamp • Closed Loop electronic controlled Safeties on engine viz. LLOP, HWT • First fill of oil • 1*12 Battery • Industrial Silencer • Residential Silencer with exhaust pipe mountings • Acoustic Enclosure • H2S Scrubber • Water traps 	1	No	1,500,000.00	1,500,000.00

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15	Change over switch, earthing pits and 4 core cable up to change over switch	1	No	100,000.00	100,000.00
16	Methane recycling grid to be provided on main digester as per drawing using 0.75" GI pipes entering the main digester at two places in each compartment.	1	No	100,000.00	100,000.00
17	boards and study material		LS	18,000.00	18,000.00
B	The estimate of mechanical and electrical equipment cost will be				3,200,000.00
C	O & M cost for one year			600,000.00	600,000.00
D	Total Project Cost (A+B)				4,839,137.72
E	O and M cost for 5 years (with 10% increase every year)			3,668,000.00	3,668,000.00
F	Total budget with installation, commissioning and 5 years O and M (D+E)			6,868,000.00	8,507,137.32
	NOTE: The item rates and cost are used only for reference and are subjected to vary based on market situations and timely updates in DSR.				

Biogas plant Capacity 10 MT/day Technical Specifications & BoQ					
Sr. No.	Description of item	Qty	Unit	Rate	Amount
A	Construction (civil work)				
1	Processing room (brick work) 7m X 3m X 5m (Length, height and breadth respectively) (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering: - 1:4) with suitable smaller platform for mixers and waste delivery system on it. Flooring of the processing room should be of Shahabad stone and channel for waste delivery should have glazed tiles. The roof will be of 4" RCC slab. The room will have four windows (1.5m X 2m) provided with aluminum grill and glass on opposite walls for good ventilation. The door should be two paneled and wide enough to facilitate the trouble free movement of the machinery and waste material. Six exhaust fans and six wall fans will be provided and adequate lighting using CFL will be provided. The room will have a toilet facility.	1	No	Annexure III	
2	Pre-digester (2 No.) should have a volume of 50m ³ each (dimensions may vary depending on the site but volume should remain constant) with a centre wall having 3' opening at the bottom for free slurry movement (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) and aeration grid (using 0.75" GI pipes of TATA class) in both the compartments to provide aeration at three levels of equal intervals starting at 1' above the bottom level. The pre-digester will be covered by a slab of 4" thickness RCC with two manholes (3' X 3') cast in MS (5mm) and having GI vent pipes of 10' X 2" O.D. The vent pipe will be connected by a flexible pipe and emptied into pre-digester at the digester side. The seal for all the openings should be airtight. The mixer slurry will be delivered through a cement pipe of 3 to 6' X 6" diameter in each of the pre-digester at 1m below the top level. The delivery of the slurry in the pre-digester will be through airtight opening and will not release any foul odor in the surroundings.	1	No		

3	Chamber joining predigester with main digester: Two chambers of 6' X 4' X 4' will be constructed in bricks between predigesters and main digester. The first chamber will join first and second predigesters with first main digester while second chamber will join second and third predigesters to second main digester. The slurry will flow from top of each predigester into this chamber and each chamber will be connected to main digester at two places using 9" diameter cement pipes of suitable length so as to deliver the slurry 9" above the bottom of main digester. The cement pipes entering into the main digester will be flushed to the wall of the main digester. The chamber will be covered with 3" thick airtight MS cover and a suitable handle.	1	No
4	Main digester (1 No.) Each one will have a volume of minimum 350m3 (dimensions may vary depending on the site but volume should remain constant) and with three partition walls (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, RCC M25, Plastering: - 1:4) as described in our drawing. Water seal around the main digester and the levels will be as per the drawing. An outlet cement pipe of 9" OD will be provided as per the drawing and will be connected to a chamber 4' X 4' X 4' (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:-1:5, Plastering :-1:4).	1	No
5	Chamber joining main digester with manure pits: A chamber of 6' X 4' X 4' will be constructed in bricks between main digester and manure pits. The slurry will flow from top of each main digester into this chamber and the chamber will be connected to manure using 6" diameter HDP pipes of suitable length so as to deliver the slurry 9" above the bottom of main digester. The cement pipes entering into the main digester will be flushed to the wall of the main digester. The chamber will be covered with 3" thick airtight MS cover and a suitable handle. A grid of pipes will be constructed for taking slurry into each manure pit	1	No
6	Manure pits: The chamber will deliver the manure slurry in manure pits through a channel. There will be 6 manure pits of 4m X 4m X 1.5m (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) as per the drawing. All the pits will have a filtration system of fine sand <0.2mm (layer of 100mm), coarse sand 0.6mm (100mm) and gravel 2 – 3 mm (200mm) with drains connected through suitable pipes to an underground water tank (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) of 10,000 liter capacity and having a MS cover (5mm sheet). The manure pits are to be covered with steel mesh using proper channel supports to avoid any sagging.	1	No

	Water tank for collecting filtrate from manure pits: A tank of capacity 40m ³ at suitable level. Brick work (Excavation, 9" Rubble Soling, P.C.C:- 1:3:6, Brick Work:- 1:5, Plastering:- 1:4) as per the drawing. <i>All cement structures are to be painted with cement paint and MS parts other than dome with green oil paint.</i>	1	No		
	Balloon room (2 No.): 7m X 5m X 6m to be constructed using metal sheets raised on 1m X 1m X 1m brick wall (45cm thick) and necessary PCC work for flooring. The room should be rodent proof. There will be two small windows at the top on opposite sides for ventilation. There will not be any electric connection within the room.	1	No		
	Generator room: 10' X 8' X 8' in brick work with two windows for ventilation and wide door with shutter to facilitate the passage of gen-set and other machine parts. The flooring should be of shahabadi stone on PCC work.	1	No		
A	Total Cost For civil works				3,764,172.52
B	Mechanical and electrical equipments cost				
1	Mixer with a capacity of 1 MT/hour fitted with 3-5 HP motor with two SS Tables (6' X 2' X variable height from 3' to 2' towards mixer end	5	No		
2	Compressor (5HP)	5	No		
3	Water pump 2 HP	5	No		
4	Solar water heater 4000L/day capacity with suitable water storage tank and hot water tank to be mounted for giving maximum efficiency in an aesthetic manner	1	No		
5	Slurry pump 3HP	3	No		
6	Two gas holder fabricated in MS (5mm sheet) with suitable reinforced structure and coated with fiber paint on outside and epoxy painting on inside will be placed in water seal before commissioning of the project.	1	No		
7	Electric panel with 15 ampere (3 No.), 5 ampere (6 No.) sockets and 5 switches for tube lights, fans etc. Mixers should be provided with L&T switches to avoid tripping of power. These switches will be suitable mounted for easy and safe operations.	1	No		
8	Gas meter Actaris Make 25m ³ /hour (4 No.) to be connected on-line	4	No		
9	Gas pipe line 300m (1" id X 300m)		No		
10	Weighing scale for 1-500 Kg	1	No		
11	Neoprene gas balloon of capacity 100 cubic meter (2 No.)	2	No		

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12	Wall mounted fans . (for processing room)	4	No		
13	Exhaust fans (for processing room)	6	No		
14	100 KVA NATURAL GAS Gen-set incorporating Water Cooled Gas Engine COUPLED TO : Reputed make Alternator rated at 40 KVA, 415 V, Mounted on common under base & includes following <ul style="list-style-type: none"> • Oil Pressure Gauge, Ammeter, Water Temperature Gauge, RPM cum Hour-meter, starter switch , toggle switches and indicator lamp • Closed Loop electronic controlled Safeties on engine viz. LLOP, HWT • First fill of oil. • 1*12 Battery • Industrial Silencer • Residential Silencer with exhaust pipe mountings • Acoustic Enclosure • H2S Scrubber • Water traps 	1	No		
15	Change over switch, earthing pits and 4 core cable up to change over switch	1	No		
16	Methane recycling grid to be provided on main digester as per drawing using 0.75" GI pipes entering the main digester at two places in each compartment.	1	No		
17	Gas blower 3 HP twin				
18	Centrifuge (2 No.) 5 HP motor with speed of 6000 rpm and accessories	2	No		
19	Conveyer belt for transporting waste material into processing room	1	NO		
B	The estimate of mechanical and electrical equipment cost will be				7,000,000.00
C	O & M cost for one year			600,000.00	800,000.00
D	The estimate for commissioning is			1,500,000.00	1,500,000.00
E	Total Project Cost (A+B+D)				12,264,172.52
F	O and M cost for 5 years (with 10% increase every year)			5,000,000.00	5,000,000.00
G	Total budget with installation, commissioning and 5 years O and M (E+F)			17,264,172.52	17,264,172.52
	NOTE: The item rates and cost are used only for reference and are subjected to vary based on market situations and timely updates in DSR.				

Annexure I						
Work Name- BOQ For Civil 1MT Biogas Plant						
Sr. No.	Maharashtra PWD SSR Item No.	Description	Qty.	Units	Rate As per PWD 18-19 (Excluding GST)	Amount
1	21.33	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	145.2	Sq.m	8	1161.6
2	21..02	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm. in depth, 1.5m in width as well as 10sqm. on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m disposed earth to be leveled and neatly dressed : All kind of soil.	122.76	Cum	143	17556.02
3	21.36	Filling available excavated earth (excluding rocks) in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead up to 50m and lift up to 1.5m.	76.00	cum	85	6460.68
4	21.38	Dry stone pitching 22.5 cm thick including supply of stones and preparing surface complete.	15.65	Cum	945	14790.50
5	24.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering : All works up to plinth level : M10	8.994	cum	4257	38288.31

6	5.33.1 & 5.34.1 CPWD -16	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately). All works upto plinth level.	52.79	cum	7319.55	386409.87
7	32.08	20 mm cement plaster with mix:1:3 (1cement:3 fine sand)	548.76	sqm	392	215116.05
8	32.21	Neat cement punning	548.76	sqm	69	37864.81
9	27.05	Providing second class Burnt Brick masonry with conventional / I.S. type bricks in cementmortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding etc. Complete	58.11	sqm	6004	348939.42
10	5.9.3 CPWD -16	Centering and shuttering including strutting, propping etc. and removal of form for: Suspended floors, roofs, landings, balconies and access platform.	52.05	sqm	422.3	21984.70
11	5.9.1 CPWD -16	Centering and shuttering including strutting, propping etc. and removal of form for: Foundation, Raft, PCC	41.71	Sq.m	193.95	8090.81
12	5.9.5 CPWD -16	Centering and shuttering including strutting, propping etc. and removal of form for: Beams, Lintel Beams	58.82	Sq.m	342.9	20170.74
13	5.9.6 CPWD -16	Centering and shuttering including strutting, propping etc. and removal of form for: Column	108	Sq.m	467.85	50527.8
14	26.33	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding complete: Thermo-Mechanically Treated bars.	5265.95	kilogram	63.994	336989.21

15	39.39	Providing and fixing in position. (as per I.S.1868/1982) Aluminium sliding window of two tracks with rectangular pipe having overall dimension 63.50x38.10x1.02 mm at weight 0.547kg/Rmt. and window frame bottom track section 61.85x31.75x1.20 mm at weight 0.695kg/Rmt. Top and side track section 61.85x31.75x1.30 mm at weight 0.659kg/Rmt. The shutter should be of bearing bottom 40x18x1.25 mm at weight 0.417kg/Rmt. Interlocking section 40x18x1.10 mm at weight 0.469kg/Rmt. And handle section 40x18x1.25 mm at weight 0.417kg/Rmt. and top section 40x18x1.25 mm at weight 0.417kg/Rmt. As per detailed drawings and as directed by Engineer in charge with all necessary Aluminum sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5mm thick plain glass with all required screw sand nuts etc, complete. With powder coating with box	4.8	Sq.m	5385	25848
16	23.04	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	800	Kg	83.51	66812.8
	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) 11.26.1 25 mm thick	27.5	Sq.m	1531.85	42125.875
Note:- Above rate are excluding of GST					Total	1,639,137.32
NOTE: The item rates and cost are used only for reference and are subjected to vary based on market situations and timely updates in DSR.						

Annexure – II						
Work Name- BOQ For Civil 5MT Biogas Plant						
Sr. No.	Maharashtra PWD SSR Item No.	Description	Qty.	Units	Rate As per PWD 18-19 (Excluding GST)	Amount
1	21.33	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	145.2	Sq.m	8	1161.6
2	21.02	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm. in depth, 1.5m in width as well as 10sqm. on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m disposed earth to be leveled and neatly dressed : All kind of soil.	122.7694	Cum	143	17556.02
3	21.36	Filling available excavated earth (excluding rocks) in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead up to 50m and lift up to 1.5m.	76.008	cum	85	6460.68
4	21.38	Dry stone pitching 22.5 cm thick including supply of stones and preparing surface complete.	15.65	Cum	945	14790.50
5	24.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering : All works up to plinth level : M10	8.99	cum	4257	38288.37

6	5.33.1 & 5.34.1 CPWD-16	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately). All works upto plinth level.	52.79	cum	7319.55	386409.87
7	32.08	20 mm cement plaster with mix:1:3 (1cement:3 fine sand)	548.76	sqm	392	215116.05
8	32.21	Neat cement punning	548.76	sqm	69	37864.81
9	27.05	Providing second class Burnt Brick masonry with conventional / I.S. type bricks in cementmortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding etc. Complete	58.11	sqm	6004	348939.42
10	5.9.3 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Suspended floors, roofs, landings, balconies and access platform.	52.05	sqm	422.3	21984.70
11	5.9.1 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Fondation, Raft, PCC	41.7	Sq.m	193.95	8090.81
12	5.9.5 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Beams, Lintel Beams	58.8	Sq.m	342.9	20170.74
13	5.9.6 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Column	108	Sq.m	467.85	50527.8
14	26.33	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding complete: Thermo-Mechanically Treated bars.	5265.95	kilogr am	63.994	336989.21

Model Tender Document for SWM using Biogas Technology- Detailed Bill of quantities

15	39.39	Providing and fixing in position. (as per I.S.1868/1982) Aluminium sliding window of two tracks with rectangular pipe having overall dimension 63.50x38.10x1.02 mm at weight 0.547kg/Rmt. and window frame bottom track section 61.85x31.75x1.20 mm at weight 0.695kg/Rmt. Top and side track section 61.85x31.75x1.30 mm at weight0.659kg/Rmt.The shutter should be of bearing bottom 40x18x1.25 mm at weight 0.417kg/Rmt. Interlocking section 40x18x1.10 mm at weight 0.469kg/Rmt. And handle section 40x18x1.25 mm at weight0.417kg/Rmt. and top section 40x18x1.25 mm at weight 0.417kg/Rmt. As per detailed drawings and as directed by Engineer in charge with all necessary Aluminum sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5mm thick plain glass with all required screw sand nuts etc, complete. With powder coating with box	4.8	Sq.m	5385	25848
16	23.04	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	800	Kg	83.516	66812.8
	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 11.26.1 25 mm thick	27.5	Sq.m	1531.85	42125.875
Note:- Above rate are excluding of GST					Total	1,639,137.32
NOTE: The item rates and cost are used only for reference and are subjected to vary based on market situations and timely updates in DSR.						

Annexure –III						
Work Name- BOQ For Civil 10MT Biogas Plant						
Sr. No.	Maha PWD SSR Item No.	Description	Qty.	Units	Rate As per PWD 18-19 (Excluding GST)	Amount
1	21.33	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	336	Sq.m	8	2688
2	21..02	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm. in depth, 1.5m in width as well as 10sqm. on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m disposed earth to be leveled and neatly dressed : All kind of soil.	409.9157	Cum	143	58617.94
3	21.36	Filling available excavated earth (excluding rocks) in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead up to 50m and lift up to 1.5m.	165.86	cum	85	14098.1
4	21.38	Dry stone pitching 22.5 cm thick including supply of stones and preparing surface complete.	63.02689	Cum	945	59560.41
5	24.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering : All works up to plinth level : M10	39.71393	cum	4257	169062.18

6	5.33.1 & 5.34.1 CPWD-16	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately). All works upto plinth level.	103.8661	cum	7319.55	760253.25
7	32.08	20 mm cement plaster with mix:1:3 (1cement:3 fine sand)	1533.455	sqm	392	601114.47
8	32.21	Neat cement punning	1533.455	sqm	69	105808.41
9	27.05	Providing second class Burnt Brick masonry with conventional / I.S. type bricks in cement mortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding etc. Complete	148.5933	sqm	6004	892154.19
10	5.9.3 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Suspended floors, roofs, landings, balconies and access platform.	176.2673	sqm	422.3	74437.68
11	5.9.1 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Foundation, Raft, PCC	73.964	Sq.m	193.95	14345.32
12	5.9.5 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Beams, Lintel Beams	105.336	Sq.m	342.9	36119.72
13	5.9.6 CPWD-16	Centering and shuttering including strutting, propping etc. and removal of form for: Column	220.8	Sq.m	467.85	103301.28
14	26.33	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding complete: Thermo-Mechanically Treated bars.	10360.65	kilogram	63.994	663019.15

15	39.39	Providing and fixing in position. (as per I.S.1868/1982) Aluminum sliding window of two tracks with rectangular pipe having overall dimension 63.50x38.10x1.02 mm at weight 0.547kg/Rmt. and window frame bottom track section 61.85x31.75x1.20 mm at weight 0.695kg/Rmt. Top and side track section 61.85x31.75x1.30 mm at weight 0.659kg/Rmt. The shutter should be of bearing bottom 40x18x1.25 mm at weight 0.417kg/Rmt. Interlocking section 40x18x1.10 mm at weight 0.469kg/Rmt. And handle section 40x18x1.25 mm at weight 0.417kg/Rmt. and top section 40x18x1.25 mm at weight 0.417kg/Rmt. As per detailed drawings and as directed by Engineer in charge with all necessary Aluminum sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5mm thick plain glass with all required screw sand nuts etc, complete. With powder coating with box	9.6	Sq.m	5385	51696
16	23.04	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	800	Kg	83.516	66812.8
17	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 11.26.1 25 mm thick	56	Sq.m	1531.85	85783.6
18	1701 Page no 21	R.C.C. pipes NP2 class 150 mm dia.	25	mtr	212	5300
Note:- Above rate are excluding of GST					Total	3,764,172.52
NOTE: The item rates and cost are used only for reference and are subjected to vary based on market situations and timely updates in DSR.						

