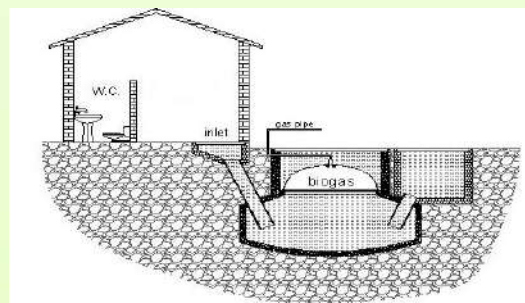
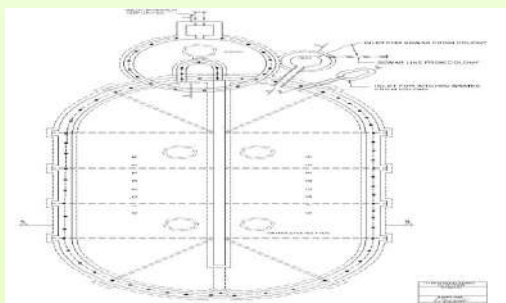


COW DUNG, WET BIOMASS WASTE AT GAUSHALA CAMPUS & FECAL SLUDGE TO BIOGAS AND BIO-MANURE PRODUCTION AT RURAL COMMUNITY & SUB URBAN COMMUNITY



Venue: Dugdh Swarn Mahotsav & Dairy Expo-2026
Indira Gandhi Pratishthan, Gomti Nagar, Lucknow.

Presented by

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April: 17-18, 2026

Major Wet Bio-mass Waste available in the Gaushala campus/ Rural/Semi Urban Community

- Cow dung in the campus, Cow Urine and fodder waste etc.
- weeds
- Food waste
- Bush cuttings
- Tree leaves
- Flower waste
- Fecal sludge

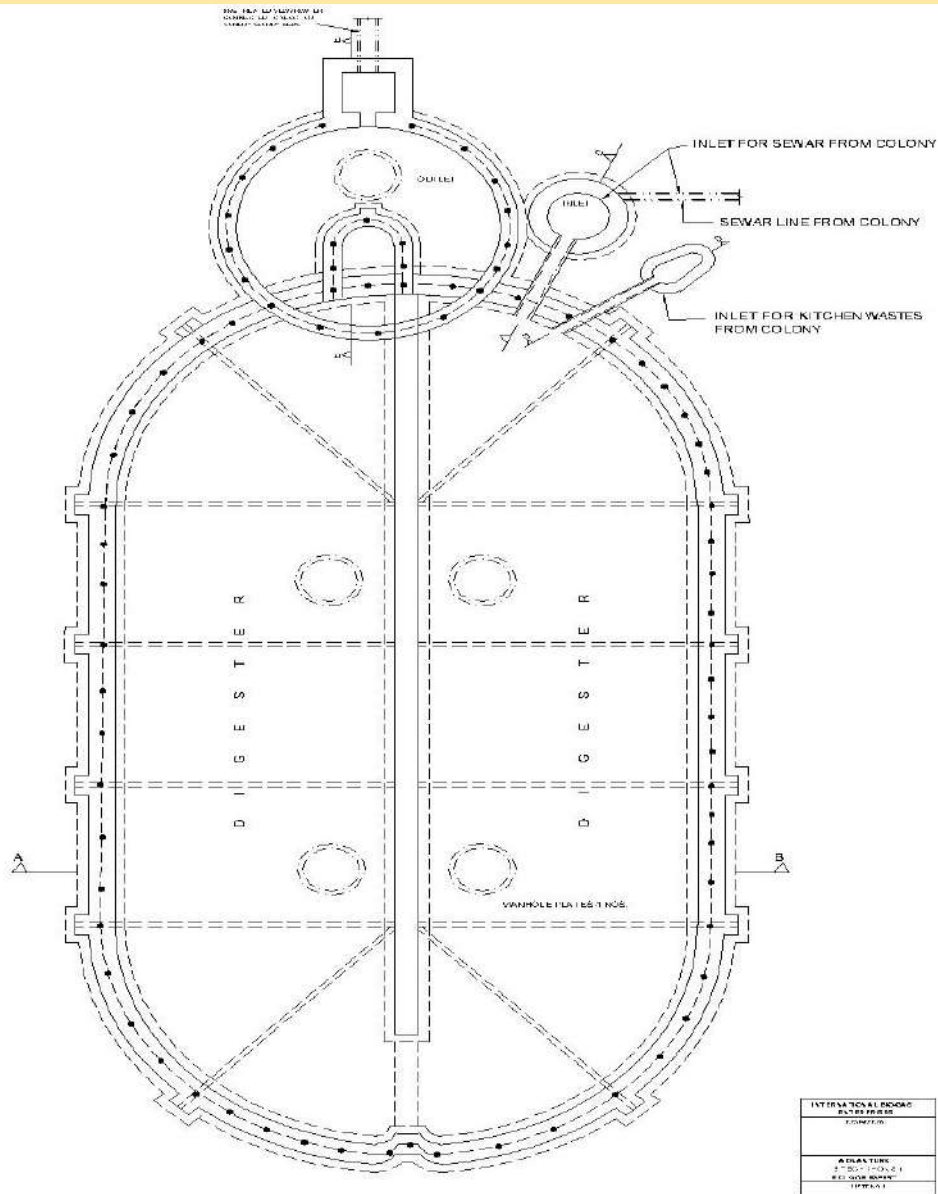
Bio-gas composition and uses

- Biogas is produced by anaerobic decomposition of wet bio-degradable waste. This process is completed in a special chamber known as Bio-gas unit. The residuals of the Bio-gas unit bio-slurry (Better known as Bio-manure. It is almost 20% of the wet bio-mass fed to the bio-gas unit).
- The composition of Bio-gas is as below:
 - 1- Methane (like to natural gas) : 62-65 %
 - 2- Carbon Di-Oxide : 30-32%
 - 3- Hydrogen Sulphide:1.00-1.5 %
 - 4- Water Vapor : 1.00-1.5 %
- Uses:
 - 1- As green fuels in community kitchen at Night Safari.
 - 2-As green gaseous fuel to DG set (100% in BG- electricity generator and mixed fuels (80:20) in existing DG Sets.
 - 3- Bio-manures would be used in the garden of the of the Govt departments and simultaneously at farmers land as organic inputs.
 - 4- As gaseous fuels to vehicles through SATAT YOJNA of MOPNG

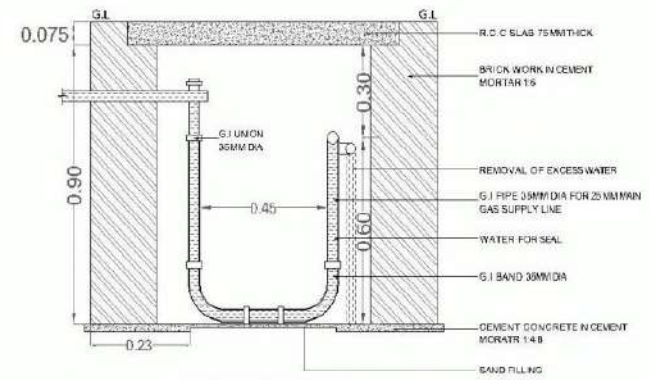
Type of Bio-gas unit

- ❖ Community Bio-gas Unit (Suitable for Community place/ Hotel/Restaurant/Gaushala)
- ❖ Family Bio-gas Unit (Suitable for a family having 6-8 persons and at least 02 animals (Cow/Buffalo))

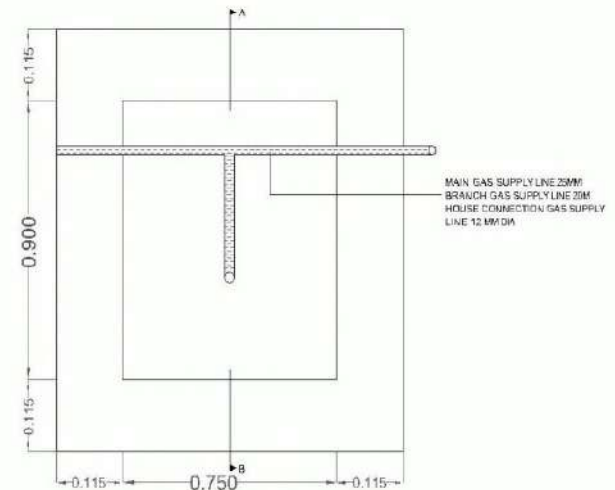
Indicative design of the Community / Commercial Unit



AUTOMATIC WATER REMOVING TRAP

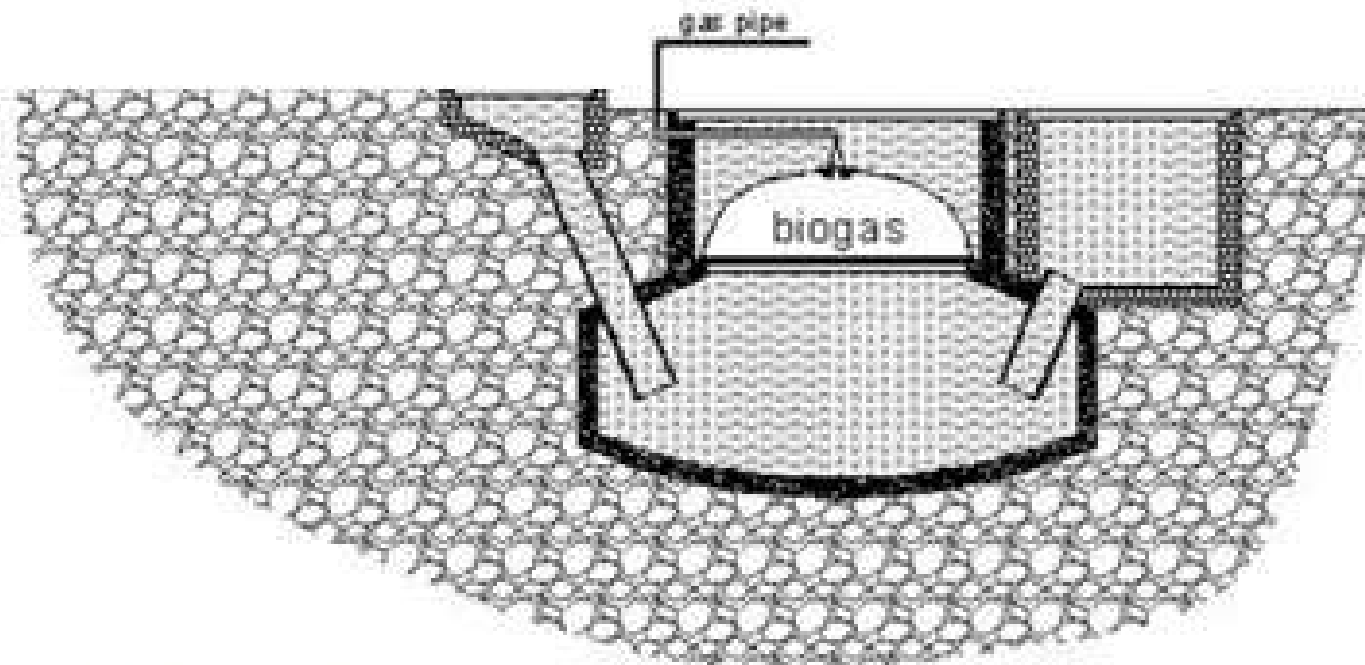


SECTION ON A-B



PLAN

Indicative Diagram of Family Size Biogas Unit



- Useful for 6-8 person family
- Cow-dung/ Bio-degradable waste required per week: 180-200 Kg

INDICATIVE COST OF DIFFERENT CAPACITY

BIO-GAS PLANT USING HETEROGENOUS

BIO-DEGRADABLE WASTE AS BASIC INPUTS.

SUMMARY OF FIXED DOME BIOGAS PLANT OF VARIOUS CAPACITY

Sl.No.	Description	2cum	4cum	6cum	8cum	10cum	15cum	20cum
1	Min. Area Required(sq.m)	10	15	18	20	25	30	40
2	Depth of Digester(m)	2.10	2.25	2.35	2.45	2.60	2.80	3.00
3	Digester Capacity(kg.lit/day)	53	105	157	210	262	367	504
4	Cattles Required(Nos.)	5	10	15	20	25	35	48
5	Average dung per cattle(kg)	6	6	6	6	6	6	6
6	Feed/day: (Any)							
6.a.	Cow dung(kg)	30	60	90	120	150	210	288
6.b.	Agricultural/Kitchen waste(kg)	18	35	50	70	85	125	165
6.c.	Poultry Wastes (kg)	35	75	115	150	190	285	380
6.d.	Sewer Wastes@6LPCD water (persons)	18	35	50	65	80	120	160
7	Cost of Digester(lakhs)	Rs.1.09	Rs.1.36	Rs.1.55	Rs.2.06	Rs.2.53	Rs.3.88	Rs.5.18
8	Available Biogas (Cum)	1.20	2.40	4.00	5.00	6.00	9.00	11.00
9	Cooking gas (Person)	7	11	15	18	22	33	45
10	Cost of Single Biogas Burner per house within 15 meter (Rs.)	5000	5000	5000	5000	5000	5000	5000
11	Electricity Generation kWh/day	2.50	3.75	5.00	6.25	7.50	11.25	15.00
12	Lamp Lighting for 10 hours a day (Nos.)	1.00	2.00	3.00	3.00	4.00	6.00	9.00
13	Bio-organic Manure (kg. / day)	10	20	30	40	50	60	90
14	Pay Back Period(Years)	12.00	12.00	11.00	11.00	10.00	9.00	9.00
15	Warrantee of the Project (Years)	30.00	30.00	30.00	30.00	30.00	30.00	30.00

- Cost mentioned in row no.7 is for the digester only, other appurtenant will be applicable extra.
- GST Applicable extra on the cost mentioned.
- Dung and urine from the sheds can be flown directly to the digester via sloop.
95% are a will be free after the completion of the construction as the digester will be constructed underground.

SUMMARY OF FIXED DOME BIOGAS PLANT OF VARIOUS CAPACITY

Sl. No.	Description	25 cum	45 cum	60 cum	85 cum	140 cum	200 cum	300 cum	500 cum	1000 cum
1-	Area Required	50 sqm	65 sqm	75 sqm	90 sqm	130 sqm	165 sqm	220 sqm	300 sqm	500 sqm
2-	Depth of Digester	3.30 m	3.60 m	3.80 m	4.15 m	4.45 m	4.70 m	5.00 m	5.45 m	6.25 m
3-	Digester Capacity	0.613 ton/day	1.12 ton/day	1.488 ton/day	2.118 ton/day	3.5 ton/day	4.988 ton/day	7.499 ton/day	12.495 ton/day	24.999 ton/day
4-	Cattles Required	70 nos.	128 nos.	170 nos.	242 nos.	400 nos.	570 nos.	857 nos.	1428 nos.	2857 nos.
5-	Average dung per cattle	5 kg.	5 kg.	5 kg.	5 kg.	5 kg.	5 kg.	5 kg.	5 kg.	5 kg.
6-	Feed / day :									
6.a.	Cow dung	350 kg.	640 kg.	850 kg.	1210 kg.	2000 kg.	2850 kg.	4285 kg.	7140 kg.	14285 kg.
6.b.	Agricultural / Kitchen waste	205 kg.	375 kg.	500 kg.	705 kg.	1160 kg.	1665 kg.	2500 kg.	4160 kg.	8330 kg.
6.c.	Poultry Wastes	310 kg.	560 kg.	750 kg.	1060 kg.	1750 kg.	2500 kg.	3740 kg.	6240 kg.	12500 kg.
6.d.	Sewar Wastes @ 6 LPCD (water)	195 persons	350 persons	470 persons	670 persons	1110 persons	1580 persons	2380 persons	3965 persons	7935 persons
7-	Cost of Digester	Rs. 6.47 lacs	Rs. 11.65 lacs	Rs. 15.56 lacs	Rs. 22.03 lacs	Rs. 36.30 lacs	Rs. 51.87 lacs	Rs. 77.80 lacs	Rs. 130.38 lacs	Rs. 137.72 lacs
8-	Available Biogas	14 cum	26 cum	34 cum	49 cum	80 cum	114 cum	172 cum	286 cum	572 cum
9-	Cooking gas	52 persons	97 persons	127 persons	184 persons	300 persons	428 persons	646 persons	1075 persons	2150 persons
10-	Electricity Generation	17.5 kWh/day	32.5 kWh/day	42.5 kWh/day	61.25 kWh/day	100 kWh/day	142.5 kWh/day	215 kWh/day	357.5 kWh/day	715 kWh/day
11-	Lamp Lighting (for 10hours a day)	11 Nos.	20 Nos.	26 Nos.	37 Nos.	61 Nos.	87 Nos.	132 Nos.	220 Nos.	440 Nos.
12-	Bio-organic Manure	1.05 qtl./day	1.92 qtl./day	2.55 qtl./day	3.63 qtl./day	6.00 qtl./day	8.55 qtl./day	12.86 qtl./day	21.42 qtl./day	42.85 qtl./day
13-	Maintenance Cost of digester	Rs. 500/ month	Rs. 900/ month	Rs. 1200/ month	Rs. 1700/ month	Rs. 2100/ month	Rs. 3000/ month	Rs.4000/ month	Rs.6000/ month	Rs.10000/ month
14-	Pay Back Period	8 Years	8 Years	8 Years	8 Years	9 Years	9 Years	9 Years	9 Years	9 Years
15-	Warrantee of the Project	30 Years	30 Years	30 Years	30 Years	30 Years	30 Years	30 Years	30 Years	30 Years

- Cost mentioned in row no. 7 is for the digester only, other appurtenant will be applicable extra.
- GST Applicable extra on the cost mentioned.
- Dung and urine from the sheds can be flown directly to the digester via sloop.
- 95% area will be free after the completion of the construction as the digester will be constructed underground.

**SOME PHOTOGRAPHS OF
WORKING & UNDER
CONSTRUCTION
BIO-GAS UNITS
AT GAUSHALA AND SUB
URBAN/ RURAL COMMUNITY**



Gas Filling in Tube and Packing of Dry Bio-Organic Manure

CONSTRUCTION OF FIXED DOME TYPE BIO-GAS PLANT IN GAUSHALA





SPACE LEFT VACANT AFTER CONSTRUCTION BIO-GAS UNIT IN A RESIDENTIAL COLONY FOR OTHER USES AS FIXED DOME TYPE BIO-GAS PLANT IS TOTALLY UNDERGROUND





Indicative presentation of Bio-gas run electricity generation unit at different locations



On going schemes to support the Biogas/CBG project

- Agriculture Infrastructure Fund Scheme
- MNRE support
- GOBARDHAN Yojna
- Any other on-going scheme of the State Govt. to support the Gaushala like breeding programme, purchase of compost/ bio-slurry for horticulture/ agriculture programme in the State.

Thank You
Jai Hind
Jai Bharat