

### SUMMARY OF FIXED DOME BIO-GAS PLANT/DIGESTER OF VARIOUS CAPACITY BASED ON COW-DUNG

<u>Sl. No.</u>	<u>Description</u>	<u>25 cum</u>	<u>45 cum</u>	<u>60 cum</u>	<u>85 cum</u>	<u>140 cum</u>	<u>200 cum</u>	<u>300 cum</u>	<u>500 cum</u>	<u>1000 cum</u>
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	3.50 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)	Cow dung	350 kg.	640 kg.	850 kg.	1210 kg.	2000 kg.	2850 kg.	4285 kg.	7140 kg.	14285 kg.
7)	Cost of Digester	Rs. 4.13 lacs	Rs. 7.43 lacs	Rs. 9.90 lacs	Rs. 14.03 lacs	Rs. 23.10 lacs	Rs. 33.00 lacs	Rs. 49.50 lacs	Rs. 82.50 lacs	Rs. 165 lacs
8)	Cooking gas	52 persons	97 persons	127 persons	184 persons	300 persons	428 persons	646 persons	1075 persons	2150 persons
9)	Electricity Generation	17.5 kWh/day or 17.5 Units/day	32.5 kWh/day or 32.5 Units/day	42.5 kWh/day or 42.5 Units/day	61.25 kWh/day or 61.25 Units/day	100 kWh/day or 100 Units/day	142.5 kWh/day or 142.5 Units/day	215 kWh/day or 215 Units/day	357.5 kWh/day or 357.5 Units/day	715 kWh/day or 715 Units/day
10)	Lamp Lighting (for 10 hours a day)	11 Nos.	20 Nos.	26 Nos.	37 Nos.	61 Nos.	87 Nos.	132 Nos.	220 Nos.	440 Nos.

11)	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
12)	Pay Back Period	6 Years	6 Years	6 Years	6 Years	6 Years	6 Years	6 Years	6 Years	6 Years
13)	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 instruments cost will be extra.
- GST Applicable extra on the cost mentioned.
- Dung, urine and sewer 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.
- The digester is concealed , so seasonal temperature variations have no effect in bio-gas formation.

Note: 1- The best use of Bio-gas is heating. So, we recommend the piped supply of green cooking gas to the rural house-holds. It will require additional cost of pipelines, bio-gas filters and a compressor. It will be on actual basis as per the location of the plant. Bio-gas generators available in the Indian markets are not so efficient. Their efficiencies are about 30% or even less.

2- The sales price of electricity is estimated @ 5.00 Per Unit while the sales price of dry bio-slurry ( Bio-manure) is estimated @ Rs 2.50 Per Kg while calculating the payback period of the project investment as mentioned at row no-7.