

# Kitchen Waste Biogas Plant

...Cooking Gas from kitchen waste...



Wealth from Waste ...

Kitchen to Kitchen ...

## MSM ENERGY ENTERPRISES

NO:56,SRI SAKTHI RAM ILLAM ,RAJA NAIDU LAYOUT-1,100 FEET ROAD,  
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## BIOGAS

Biogas can be obtained from any kind of fermentable wastes such as animal dung, vegetable waste, kitchen waste, food waste, Human faeces, Fruit waste or any kind of wet organic waste etc. Biogas is a clean and efficient fuel which can easily replace petrol, diesel and LPG. The application varies from cooking, lighting, power generation, irrigation, refrigeration and room heating. Apart from fuel gas, we can get good quality of manure from the wastes, is an added benefit of biogas production.

## TECHNICAL INFORMATION

### Production Process:

Methanogenic bacteria naturally available in Cow dung is fed into the digester as a initial start-up and mass propagation of microbial culture takes and biogas production starts within 15 to 20 days under anaerobic condition. After micro-organisms development, start feeding Food waste into biogas digester. Waste is mixed with water and loaded inside. The biogas produced from the digester is supplied in pipe lines for Thermal application / power generation. The digested slurry which comes out of the biogas digester is going to the fields as enriched manure.

### Quality Standards:

Methane gas coming out from the plant is as good as CNG or LPG. It's burning process and thermal efficiency is also of similar nature

## SPACE REQUIREMENT

### For biogas plant (Inlet tank, bio-digester & outlet tank)

a) 0.5M <sup>3</sup> Biogas plant	-	1.0 Mt x 1.0 Mt
b) 0.75M <sup>3</sup> Biogas plant	-	1.2 Mt x 1.2 Mt
b) 1 M <sup>3</sup> Biogas plant	-	1.4 Mt x 1.4 Mt
c) 2 M <sup>3</sup> Biogas plant	-	1.8 Mt x 1.8 Mt
d) 5 M <sup>3</sup> Biogas plant	-	2.4 Mt x 2.4 Mt

## DETAILED LIST OF EQUIPMENTS

S.No	Name of the Equipment	Quantity	Scope of work	
			MSM ENERGY	Client
1	Floating drum type anaerobic digester with gas holder	1 No	✓	
2.	Inlet & outlet line	1 No	✓	
3	Biogas stove – Single Burner	1 No	✓	
	0.5 M <sup>3</sup> Plant – Bio gas Stove			✓
4	Biogas Stove – Lighter	1 No		✓
5	Gas tubes from plant to Burner	10 meter	✓	
6	Bucket for (Slurry Collection)	1 no		✓
7	Food waste crusher with sink and stand fitting (Optional) Cost will be Extra	1 No	✓	

## TECHNICAL SPECIFICATIONS OF DOMESTIC BIOGAS PLANT - 1 M<sup>3</sup>

Biogas Plant Model		Specifications	
Biogas Plant Type		Floating drum –Water seal model	
Feed stock		Food/Vegetable & Kitchen Waste	
Required solids content (%)		~10%	
Rated Waste Consumption (Kg/day)		~ 10	
Rated Water consumption (L/day)		~ 10 -30	
Cow dung required for initial start-up (Kg)		~80	
Bio-Digester Output			
Biogas production (M <sup>3</sup> /day)		~ 1	
Average Gas Calorific Value (Kcal/Nm3)		~4,700	
Biogas burning time for single burner (Hrs.)		~2.0 to 2.5	
Organic Manure Generated (Lit/Day)		~ 10 – 30	
Biogas Equivalent to LPG			
Biogas Equivalent to LPG (Kgs/day)		~ 0.5	
Biogas Efficiency (%)			
Typical Gas Composition (% on Volume basis)		CH <sub>4</sub> ~ 60%	CO <sub>2</sub> ~ 33%    H <sub>2</sub> < 0.5%
		H <sub>2</sub> S < 0.2%	H <sub>2</sub> O < 4%
		N <sub>2</sub> ≤ 1%	O <sub>2</sub> ≤ 0.5%

CH <sub>4</sub>	=	Methane	CO <sub>2</sub>	=	Carbon dioxide
H <sub>2</sub>	=	Hydrogen	H <sub>2</sub> S	=	Hydrogen sulphide
H <sub>2</sub> O	=	Water	N <sub>2</sub>	=	Nitrogen
O <sub>2</sub>	=	Oxygen			

2 - 3 Kg per day of Food Waste	=	0.6 M <sup>3</sup> /day of biogas
5 - 7 Kg per Day of Food Waste	=	1 M <sup>3</sup> /day of biogas
7 - 10 Kg per Day of Food Waste	=	2 M <sup>3</sup> /day of biogas
15 - 20 Kg per Day of Food Waste	=	3 M <sup>3</sup> /day of biogas
25 - 35 Kg per Day of Food Waste	=	5 M <sup>3</sup> /day of biogas
50 - 60 Kg per Day of Food Waste	=	10 M <sup>3</sup> /day of biogas

## FINANCIAL INFORMATION

S. No	Particulars	Price
1	0.04 M <sup>3</sup> /Day of Desktop Demo Biogas Plant	Rs. 9300/-
2	0.6 M <sup>3</sup> /Day of Biogas Plant	Rs. 23,500/-
3	<b>1 M<sup>3</sup>/Day of Biogas Plant</b>	<b>Rs. 48,500/-</b>
4	<b>2 M<sup>3</sup>/Day of Biogas Plant</b>	<b>Rs. 74,500/-</b>
5	3 M <sup>3</sup> /Day of Biogas Plant	Rs. 124,500/-
6	5 M <sup>3</sup> /Day of Bio Gas Plant	Rs. 1,98,500/-
7	10 M <sup>3</sup> /Day of Bio Gas Plant	Rs. 3,94,500/-
<b>Exclusions</b>		
<ul style="list-style-type: none"> <li>* Transportation of material, Transit Insurance and other formalities will be at buyer's scope.</li> <li>* Unloading of the biogas plant will be at buyer's scope.</li> <li>* Pit digging (if required), Cow dung arrangement &amp; feeding into bio digester for initial start-up, Gas hose from biogas plant to kitchen biogas stove, Electrical Starter for crusher, Electricity/water supply for crusher and other accessories will be at buyer's scope.</li> </ul>		

## TERMS AND CONDITIONS

<b>Payment Terms</b>	80% as advance of basic value along with purchase order Balance 20% against Proforma Invoice (Before Deliver)
<b>GST</b>	Extra as actual
<b>IGST</b>	Extra as actual
<b>Freight</b>	Extra
<b>Packing &amp; Forwarding</b>	@ 2%
<b>Delivery Period</b>	10-15 days after the receipt of technically and commercially clear Purchase order & advance
<b>Validity of Offer</b>	30 days
<b>Any other Tax Liability if applicable shall be in the scope of the purchaser.</b>	



### Company Bank Details:

Account Name	MSM ENERGY ENTERPRISES
Account Number	6299564086
Bank Name	Indian Bank
Branch	Puliyakulam Branch
IFSC Code	IDIB000P077

## MSM ENERGY ENTERPRISES

### KITCHEN WASTE BIO GAS PLANT

S. No	Size	Name	Food Waste	Burning Time
1	0.04	Nano B	100 gram	5 – 10 Min
2	0.6 M <sup>3</sup>	Flexi Mini	2- 3 Kg	1 Hour
3	1 M <sup>3</sup>	Flexi	4 – 6 Kg	2 Hours
4	2 M <sup>3</sup>	Flexi Double	10 – 12 Kg	4 Hours
5	3 M <sup>3</sup>	Flexi Jumbo	15 – 18 Kg	1.5 Kg LPG
6	5 M <sup>3</sup>	Jumbo	25 – 30 Kg	2.5 Kg LPG
7	10 M <sup>3</sup>	Jumbo Double	50 – 60 Kg	5 Kg LPG

(Flexi Mini & Flexi Will Get Single Burner Stove, Flexi Double & Flexi Jumbo Will Get Double Burner Stove, Jumbo Will Get Canteen Stove.)

More Than 10 Cubic Meter we suggest RCC Digester is advisable - GST: **Extra**,  
IGST: **Extra**, Package & Transport: Extra as actual

Price Valid for one Month Only

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