

LARGE SIZE BIOGAS POWER PLANT



1250 (Ground Floor), Mukherjee Nagar,
Delhi 110009, India.

Tel: + 91-11-41510037

Cell: +91- 9811566636

Mail: info@geonengineers.com

Web: www.geonengineers.com

**GEON ENGINEERS
PVT. LTD.**

INTRODUCTION

The main objective of the project is to set up a biogas based power plant to sale the power to the state govt. via a long term PPA. Power produced from biogas and fed to the grid gets preferential rate of around Rs. 7.50/-. Biogas plant also produces organic manure in large quantity which can be sold at about Rs. 1.5 per kg in open market. Any amount of the power can be fed to the grid. Similarly organic manure is always in short supply. It is needed for fruits and vegetables and horticulture.

The plant can be set up in a place where cow dung and Poultry droppings or biomass waste or press mud is available in large quantity or some other source of waste bio material is available.

A standard biogas based generator of 1067 OR 635 kW power capacity can be used. We also know that 1 CU M gas produces about 2.5 kWh units. So, a Biogas plant will be installed to produce 10500 OR 6000 CUM biogas per day as per the Generator capacity.

POWER CAPACITY (kW)	1067	635
BASIC CAPACITY OF THE PLANT (Cubic Meter Raw Biogas Production)	10500	6000
DAILY POWER GENERATION (kWh)	25,608	15,240
POWER UNITS PRODUCED/YEAR (MWh)	8963	5334
ORGANIC FERTILIZER (30% moisture) (MT/day)	60	30
ORGANIC FERTILIZER (30% moisture) (MT/year)	21000	10500

Below we are giving approximate quantities of the requirements.

POWER CAPACITY, KW	1067	635
DUNG REQUIRED DAILY (TON)	210	120
OR		
POULTRY DROPPINGS (TON)	75	45
OR		
BIOMASS WASTE (TON)	75	45
OR		
FOOD WASTE (TON)	105	60

Combination of any of these can also work in proportionate quantity.

Area required is 1 acre to 2 acre.

MAIN STATUTORY REQUIREMENTS

1. Approval from state nodal agency
2. Pollution control approvals
3. Change of land use permission.
4. We have to get the approval from State electricity regulator for the long term PPA with state govt. at CERC rates.
5. We have to sign the long term PPA with state govt. at CERC rates.

GOVERNMENT SUPPORT

1. Govt subsidy is Rs 3.0 Crore. Per 1 MW power capacity.
2. No fees charged for change of land use permission.
3. Custom duty concessions

OTHER FINANCIAL SUPPORT

1. GOLD STANDARD CARBON CREDITS

PLANT AND MACHINERY**1. RECEIVING TANK**

2. DIGESTER, AGITATORS and DOUBLE MEMBRANE TOP BALLOON**3. H₂S SCRUBBER**

- 4. BIOGAS ONLINE MONITORING:**
- 5. EFFLUENT BUFFER TANK:**
- 6. EXCESS GAS FLARING SYSTEM**
- 7. SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)**

8. GAS BASED POWER GENERATOR



9. SCREW PRESS, SETTLING AND AERATION TANK, AND BAGGING MACHINE



FINANCIAL ANALYSIS OF DIFFERENT CAPACITIES (RS. IN LAKH)

	INSTALLED CAPACITY	1067 kW	635 kW
PLANT AND MACHINERY COST	1080	650	
Equity of the promoters, 30%	400	250	
SUBSIDY	300	150	
Power Production in MWHr	8066.52	4800.6	
Organic manure in Ton / day	55	30	
Cost of operation / year	460	275	
SALE PRICE OF RS. 1.5 PER kg	292.95	146.48	
SALE PRICE OF RS. 7.6 PER kWh	629.19	374.45	
TOTAL SALES AS CALCULATED	922.14	520.92	
NET OPERATING PROFIT	280	132	
PAYBACK PERIOD (Years)	1.5	2.5	
IRR	45%	35%	

SUPPLIES AND SERVICES PROVIDED BY GEON ENGINEERS

- 1. PROJECT PROFILE:** The project profile is available with complete details on the project.
- 2. ALL CLEARANCES INCLUDING, POLLUTION CONTROL, CLU AND PPA:** All necessary documentation including DPR for clearances / approvals necessary for the project and all other applications.
- 3. FINANCIAL CLOSURE:** We work to suggest the most appropriate financial structure and matching financial agencies. We work to get the approval the loan and fulfilment of pre-disbursement conditions.
- 4. COMPLETE ENGINEERING, CIVIL CONSTRUCTION AND PLANT & MACHINERY SUPPLY AND ERECTION:** We can do complete engineering, construction, supply and commissioning of the plant and machinery.
- 5. SUBSIDY, CUSTOM DUTY EXEMPTION AND GOLD STANDARD CARBON CREDITS:** All necessary documentation and work for approvals necessary for Subsidy, Custom and Gold Standard carbon Credits for the project.

REPRESENTATIVE PROJECTS:

- 1. M/s. Hargobind Bio Energy, Patiala, Punjab:** They have set up grid connected biogas gas plant of 6000 CU M capacity with Biogas based Generator set of 635 kW capacity.
- 2. M/s. Shree Krishna Bio Power, Haryana:** They want to set up grid connected Biogas based Power Generation Plant. They will set up one biogas gas plant of 11000 CU M capacity with Biogas based Generator set of 1067 kW capacity.
- 3. M/s. K2 Power Renewal Pvt. Ltd., Haryana:** They want to set up 2 MW grid connected Gasifier based Power Plants. They have signed long term PPA with state govt.