

BIOMASS GASIFIER

1. What is Biomass Gasifier system?

Biomass gasifier system is a closed vessel, normally, cylindrical in shape, in which solid biomass material such as wood waste, agro residues, branches and twigs of plants etc. are subjected to partial combustion in the presence of a limited supply of air.

2. What is Gasification Process?

Biomass Gasifier converts solid biomass into more convenient gaseous form, this process is called Gasification. The gas produced is known as 'producer gas' with an average composition of CO-20%; CH₄ :3%, H₂ : 20 %, CO₂ : 12 % and the rest being N₂.

3. Which are the most widely used gasifiers?

The most widely used gasifier types are updraft and downdraft. In updraft gasifier, fuel and air flow are in counter current fashion, fuel coming down from top. In the downdraft gasifier, fuel and air flow are in co-current fashion from top to bottom.

4. What are the main requirements for installation of gasifier?

- i. Availability of woody biomass material which can be obtained from trees of Julifora Prosopis, Casuarinas, Eucalyptus, Acacia, and Subabool as main feedstock and agro wastes like Tapioca Stalks, Ground nut shell, Coconut Shells, Sugarcane Trash, Corn Stalks etc. with moisture level of 5 to 10 %.
- ii. Space & skilled/semi-skilled manpower

5. Who are the beneficiaries?

Rice Mills and other industries for captive power and thermal applications, rural areas, Energy Service Companies (ESCOs), Co-operatives, Panchayats, SHGs, NGOs, manufacturers or entrepreneurs, independent power producers, promoters & developers etc.

6. What are the minimum required documents?

1. Project proposal as per MNRE, GoI programme guidelines along with annexure
2. Proof of possession of land
3. Undertaking & affidavits
4. Source of finance

7. What is the pattern of Central Financial Assistance?

S. N.	Items	Pattern of CFA
Biomass Gasifier based Distributed / Off-grid power programme for Rural Areas :		
i.	Distributed / off grid power projects in rural areas and grid connected power projects with 100% producer gas engines or biomass based combustion projects.	Rs.15,000 per kW
ii.	Biomass gasifier projects for Distributed / Off-grid for Rural Areas and grid connected power projects for ensuring regular availability of biomass, provision of collection, processing and storage and operation & maintenance including compulsory AMC for 5 years after the guarantee period.	Rs.1.50 lakh per 50 kW
Captive Power and Thermal applications in Rice Mills and Other Industries :		
A.	Biomass Gasifiers for thermal and electrical applications	
i.	Thermal applications	Rs.2.0 lakh / 300 KW th
ii.	Electrical applications through dual fuel engines.	Rs.2.5 lakh / 100 KWe
iii.	Producer gas engines with gasifier system.	Rs.10.00 lakhs / 100 Kwe
iv.	Producer gas engine alone.	Rs. 8.00 lakhs / 100 Kwe
B.	Deployment of biomass Gasifiers with 100% producer gas engines in Institutions for captive use	
i.	100% producer gas engines with gasifier system	Rs. 15.00 lakhs / 100 kWeq.
ii.	100% producer gas engines alone	Rs. 10.00 lakhs / 100 Kwe