



MINISTRY OF ENVIRONMENT AND FOREST
UNDP/BGD/96/007
Sustainable Environment Management Programme [SEMP]



**Electricity Generation from Poultry Waste
Muslim Mission, Faridpur**

**Sustainable Rural Energy (Comp 2.6)
Local Government Engineering Department**

Now a days poultry has become an emerging sector to meet countries protein demand. Likewise the sector offers huge potential to produce clean electricity utilizing poultry waste that could meet the power demand of this sector as well as the need of the adjacent households at low cost. Actually Biogas is the hidden technology to produce electricity from poultry waste. When organic waste like poultry litters, cow dung, any agricultural residue etc. are decomposed in the absence of air, clean gas is produced which is commonly known as bio-gas. The content of the gas is about 70% methane (CH₄) and the rest are carbon-di-oxide (CO₂), Hydrogen Sulphid (H₂S) and moisture. By burning this gas electricity can be produced. After producing this gas residual slurry can be used as a good quality organic fertilizer.



Electricity generation from poultry waste, at Muslim Mission Faridpur

Faridpur Muslim Mission is an institution for rehabilitation of the orphans and destitute children. As a part of its massive programme to provide shelter, food, and education to them, Faridpur Muslim Mission, Immediately after its inception, instituted an orphanage named as 'Faridpur Muslim Mission Orphanage' in 1984. It has now 400 inmates from different parts of the country. Other than formal education the inmates are engaged in different extra curricula activities such as Pisciculture, Cattle farming, Poultry farming, Hands on training on Auto-mobile, Turner, Welding, Carpentry, Electrical works, Electronics, Mini garments and Computer training.

A Poultry house of about one thousand square feet has been constructed for the poultry project of the Mission. The children of the Mission are learning practically from this project. The eggs and fowls from this project supply nutrition to the inmates. It is also a major income generating activity of the Mission, that's why we have chosen this site economically viable for implementing 'Electricity generation unit from poultry waste'. After completion of the project the system will be handed over to the Management committee and they will be responsible for the operation and maintenance of the Power unit.



Collection for poultry waste, raw material for Bio Electricity

Sustainable Rural Energy (SRE), a component of Sustainable Environment Management Programme (SEMP), a project of Ministry of Environment and Forest funded by UNDP, has installed several pilot demonstration plants using renewable energy sources like Solar, Wind, Hydro and Biomass. As a part of our activities we have installed an electricity generation unit from poultry waste at Faridpur Muslim Mission. If successful, this project could be replicated throughout the country and contribute significantly to our energy sector.

Salient Features of Electricity Generation Unit at Faridpur Muslim Mission :

- Total number of birds at present are 5000 Mission has planned to increase up to 20000 in the future
- Installed power generation at present is 4 KW, to be increased up to 10 KW
- Capacity of bio-gas plant is 2000 ft³
- Estimated cost is Taka 6.93 lac
- Use of biogas residue : Own Agriculture farm of Muslim Mission, Faridpur



Generator is powered by poultry Biogas at Muslim Mission, Faridpur power generation unit at, Muslim Mission, Faridpur

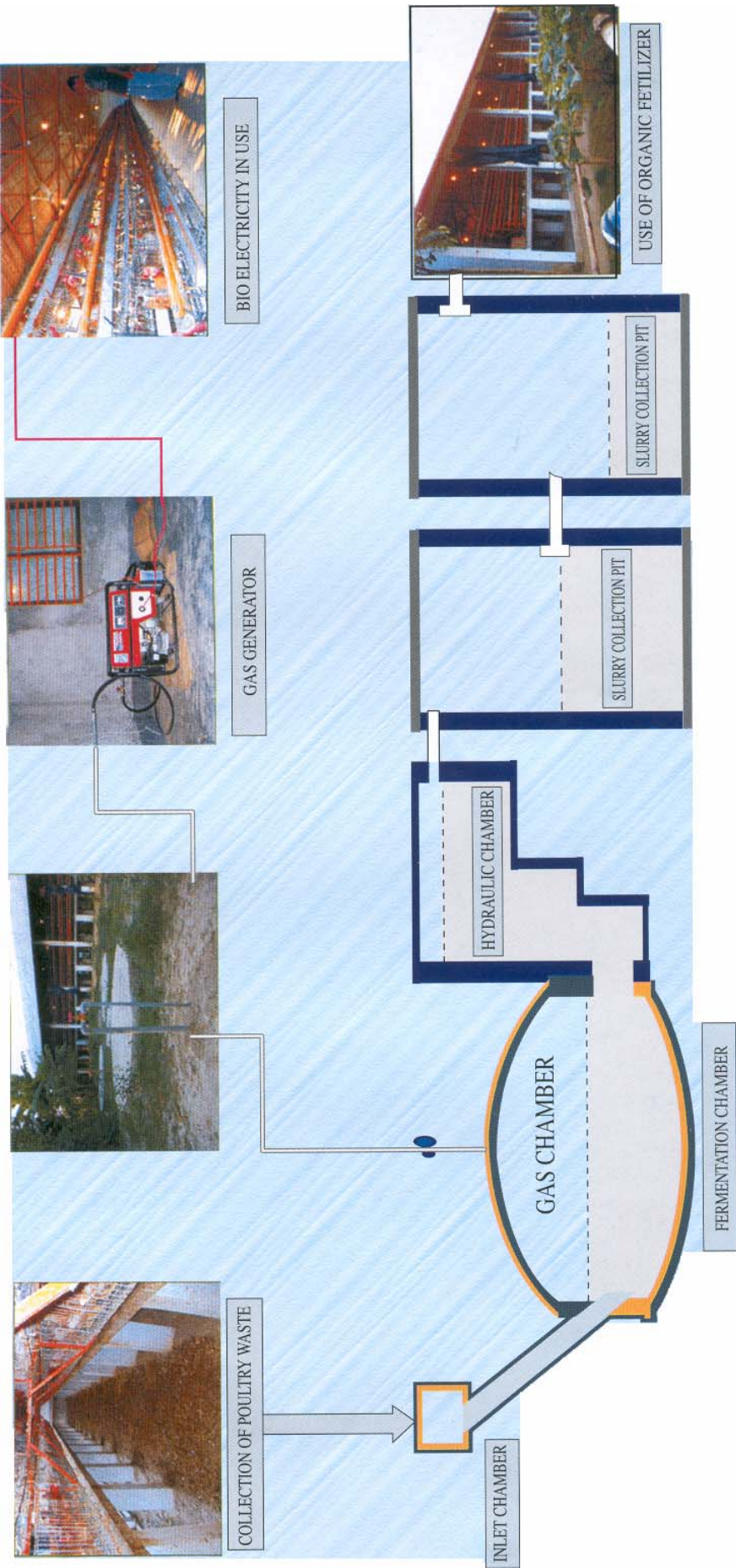
Conclusion:

- Prior to use of bio-gas for electricity generation it should be freed from Hydrogen Sulphid and moisture
- Electricity generation from poultry waste is technically and economically feasible
- Small sized gas generator available in the market, that could be used for producing electricity
- Further research & development is necessary to make the project popular and easy to operate
- The system is self controlled, so problem of load shading could be avoided. Thus egg production could be increased by about 12% due to un-interrupted power supply
- Small and cottage industries could be developed by using the electricity form poultry waste
- It is environmentally friendly technology and could be replicated through the country and thereby contribute significantly to our energy sector and economy.
- Residue from biogas plant could be used as a good quality organic fertilizer

Cost Analysis : (Figures in TK)

1.	Capital Investment	:SEMP Contribution	4,95,000.00
2.	Yearly Operation Cost		
	i) One labour Cost	: (2500.00 per month x 12 months) =	30,000.00
	ii) One Technician Cost	: (3000.00 per month x 12 months) =	36,000.00
	iii) Maintenance and repair cost:	(1000.00 per month x 12 months) =	12,000.00
		Total Running cost =	78,000.00
3.	Annual income	: From savings on electricity	= 1,38,000.00
		From sale of fertilizer	= 85,100.00

ELECTRICITY GENERATION FROM POULTRY WASTE



SCHEMATIC DIAGRAM