

**A FEASIBILITY STUDY OF BIOGAS PLANT IN MUKUNDAPUR VDC OF
NAWALPARASI DISTRICT, NEPAL**

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the Degree of Master of Arts**

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LETTER OF RECOMMENDATION

This thesis entitled "A Feasibility Study of Biogas Plant in Mukundapur VDC of Nawalparasi District, Nepal" has been prepared by Ram Prasad Tiwari under my supervision. I hereby recommend that the project report submitted in partial fulfillment of the requirements for the degree of Master of Arts in rural development, be examined by the project report examination committee.

Dr. Prem Sharma
Project Report Supervisor

APPROVAL SHEET

We certify that this thesis entitled "A Feasibility Study of Biogas Plant in Mukundapur VDC of Nawalparasi District, Nepal" submitted by Mr. Ram Prasad Tiwari to the Central Department of Rural Development, Tribhuvan University, in partial fulfillment of the requirements for the degree of Master of Arts in Rural Development has been found satisfaction in scope and quality. Therefore, we accept this project report as a part of the said degree.

Evaluation Committee

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This thesis entitled "A Feasibility Study of Biogas Plant in Mukundapur VDC of Nawalparasi District, Nepal" has been prepared to understand the feasibility of biogas plant in the development VDC.

I would like to express my hearty gratitude to my parents and family members who encourage me to prepare this project report successfully.

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Executive Summary

Gobar Gas plant is one of the sources of renewal energy, which has been playing important role to protect the deforestation. It utilizes internal resources and fulfills domestic energy requirement. It provides the slurry as a by-product, which can be used fertilizer that increases productivity of the land. It reduces the import volume of fuel and fertilizer. We have to develop it through-out the nation since its importance and demand have been increasing day by day.

As the installation Biogas plant can provide energy for cooking, lighting and fertilizer, most of the farmers are interested in this program. For this purpose, the study has been completed Mukundapur VDC of Nawalparasi District.

The general objective of this study is to inquire into the possibility of installing plants as an alternative source of energy with having specific objectives of this is undertaken mainly from view point of three major factors livestock holding to estimate the availability Cowdung for plant, family size for capacity of plant and land holding of households for collateral if necessary.

In order to meet objective of the feasibility study of biogas plant, the exploratory method of research was adopted as research design. Population was randomly sampled and required data were collected by means of questionnaire technique. Both secondary and primary data were statistically processed and analyzed.

Among 60 sampled households 36 households have got feasibility to establish biogas plant of different capacities in ward no. 1, it covers 60% of the sample households. So is the case in ward no. 2, too were 30 feasibility households out of 56 sampled households representing 53.57% of the feasibility households have got feasibility to establish biogas plant of different capacities.

It is found that 26 out of 49 (53.06%) from ward no. 3, 22 out of 46 (47.83%) from ward no. 4, 48 out of 70 (68.57%) from ward no. 5, 21 out of 62 (33.87%) from ward no. 6, 23 out of 60 (53.33%) from ward no. 7, 16 out of 52 (30%) from ward no. 8 and 12 out of 30 (36.36%) from ward no. 9 as feasibility households for biogas plants.

To sum up the major findings of the study is that out of 485 sampled households, 243 households were found feasible to establish biogas plants of different capacities. The feasible households' stand for 50.10% of the total sampled family respondents.

Hence, the study has come to conclude that from the view point of three major factors livestock holding, size of landholding and family size 243 families representing 50.10% of total sampled families in VDC have a good feasibility for the establishment of the bio-gas plant of 4cu.m., 6cu.m., 8cu.m and 10cu.m. capacities respectively. In the context of capacities of biogas plants, out of total feasibility households for biogas plants, 110 households have got 6cu.m. capacities of biogas plants and also 52, 48 and 33 families have got 4cu.m., 8cu.m. capacities of biogas plants respectively.

The highest feasibility percentage of biogas among the total ward is of 60% and 68.57% in ward no. 1 and 5 respectively. The lowest feasibility percentage of biogas among the total ward is of 33.87% and 30.76% is in ward no. 6 and 8 respectively.

Among total sampled households may have biogas plants having 6cu.m. capacity in highest percentage. Out of 243 feasibility households, 110 households do have their biogas plants having 6cu.m. No biogas plant having more than 10cu.m. is found in the entire VDC.

One hundred five households out of sampled, five families are considered unable to install biogas plants because they have only one or no livestock at all which is insufficient to run the biogas plant.

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ABBREVIATIONS/ACRONYMS

ADB/N	-	Agricultural Development Bank of Nepal
BBC	-	Biogas Co-ordination Committee
BOP	-	Balance of Payment
BSP	-	Biogas Support Program
CES	-	Centre for Energy program
CMS	-	Consolidated Management Services Nepal (P.) Ltd.
Cu. m	-	Cubic Meter
DCS	-	Development Consulting Services
DGM	-	Deputy Group Discussion
FGD	-	Focus Group Discussion
GGC	-	Gobar Gas Company
HMG/N	-	His Majesty's Government of Nepal
KVIC	-	Khadi and Village Industries Commission of India
LPG	-	Liquefied Petroleum Gas
Ltd.	-	Limited
MW	-	Mega Watt
P.	-	Private
SNV/N	-	Netherlands Development Organization Nepal
TCN	-	Timber Corporation of Nepal
TOE	-	Ton of Oil Equivalent
UMN	-	United Mission to Nepal
VDC	-	Village Development Committee