

# Gender Aspect of Energy Based Enterprises: Case Studies of Microhydro, Solar and Biogas from Nepal

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# SUMMARY OF THE PRESENTATION

- Introduction
- Results of Interviews
  - Syaurebhumi MHP
  - Biogas Company
  - Solar Company
- Profile of Women Entrepreneurship Development
- Policy, legal and regulatory framework for Entrepreneurship development
- Institutional Systems
- Way Forward



# INTRODUCTION

- Total energy consumption in Nepal in 2015 – 11.3 million tons of oil equivalent.
  - 16% from petroleum products and coal;
  - 3% each from modern renewable energy and electricity;
  - 78% from fuel wood.
- 80% consumed in residential sector ( 70% for cooking).
- Huge scope for using clean energy.
- A capacity of 29 MW (electricity) is available from 3400 micro-hydro plants.
- About 400,000 domestic biogas plants are installed.
- About 600,000 solar PV home systems have been installed in the country.




# BENEFITS OF RENEWABLE ENERGY

➤ Renewable energy extension projects have two aspects:  
Generation and application

- the projects generate new employment opportunities for local people including women;
- the energy generated also creates new local employment opportunities, as new businesses can use it.

For example, a micro hydro-electric project (MHP) allows machines to be run for:

- agro-processing and also fruit processing into juice and jam;
  - carpentry work, metal work;
  - paper-making etc.
- These new businesses need entrepreneurs to start and run them, and some of these entrepreneurs could be women.
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# OVERVIEW OF BUSINESS ENVIRONMENT

- Not much emphasis has been placed on gender-based disparity in entrepreneurship in Nepal.
- United Nations statistics highlight:
  - that women comprise half of the world's population;
  - perform two thirds of the work, but
  - only a small percentage consider entrepreneurship.
- Three renewable energy entrepreneurs interviewed
  - microhydro project, run by a man;
  - biogas project, run by a woman;
  - solar project run by a woman.



# Syaurebhumu MHP

- Mr. Sudharshan Budathoki from Nuwakot district built a MHP with a capacity of 23 kW from a design discharge of 370 lps and gross head of 11.4 m.
- The construction was completed in June 2013.
- However the national grid reached the area while it was being constructed. The potential consumers (240) households were connected to national grid.
- Mr. Budathoki approached to AEPC, and NEA and after 5 years of struggle he managed to connect power to the grid.
- So MHP was linked to grid and a Power Purchase Agreement (PPA) with NEA concluded in 2016.
- Total Annual Energy Generation of 178,245 kW hr and
- Mr. Budathoki generating income of Rs 5500 per month.



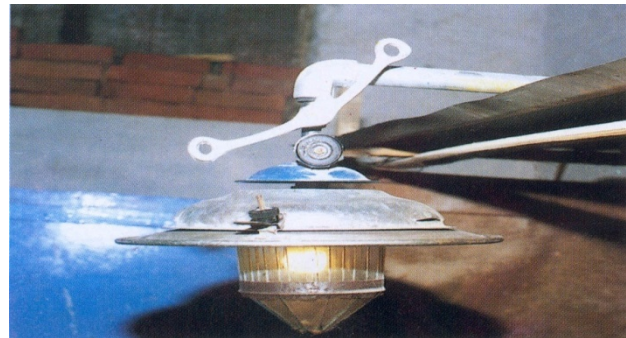
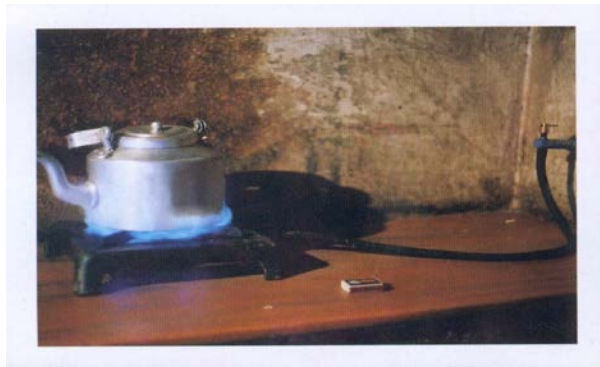
# Policy Breakthrough for MHP Interconnection

- Two features of electricity supply in Nepal:
  - Construction of large numbers of micro hydro plants (MHPs);
  - Rapid expansion of the national power grid.
- A need to link two aspects, advocacy started in 2011.
- Nepal Electricity Authority (NEA) agreed to interconnect MHPs of less than 100 kW capacity in July 2014.
- First Interconnection MHP work completed in January 2018.
- Potential for 100 MHPs to be connected.



# Biogas Programme

- BSP (Biogas Support Program), set up by SNV
  - Licensed 134 companies to make biogas plants and equipment;
  - 4 biogas construction companies run by women.
  - Companies formed NBPA (Nepal Biogas Promotion Association) in 1994;
- Programme has installed over 400,000 biogas plants.
- Follow-up surveys suggest at least 85% of plants still working 5 years after installation.
- SNV (with HIVOS) replicated program in 21 countries in Asia and Africa.



Biogas lamp

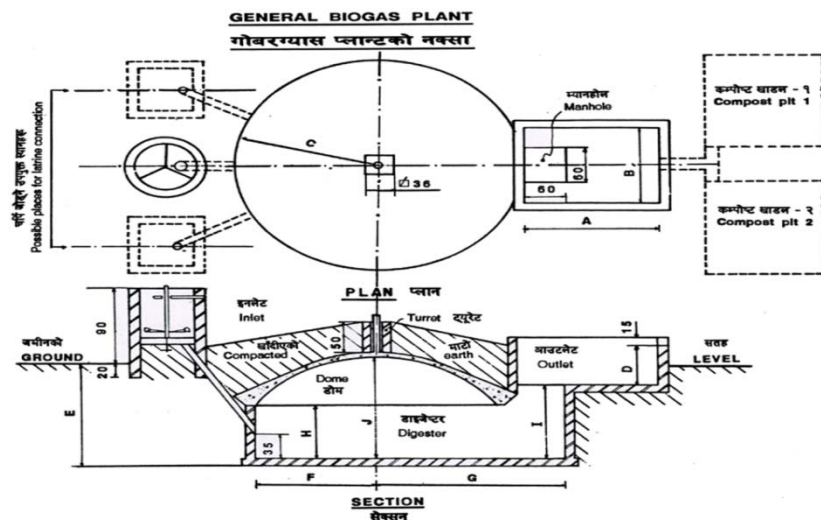




# Himal Energy Development P. Ltd.

- Himal Energy Development P. Ltd. was established in 2004 (2061 BS) by Ms Urmila Rai.
- She had worked for an NGO and learnt to build the Deenbandhu design (popular in India - using bricks).
- A license from BSP meant she had to install a design used in Nepal, called the GGC 2047 – concrete fixed dome.
- HEDP have installed 500 Indian deenbandu plants and 1500 GGC 2047 model, presently installing 60 to 100 plants per year.
- There are a total of nine staff, three male and 6 female. Five of the women are masons who install the plants.

- Ms. Rai started her career working with an NGO
- Find this job refreshing and satisfactory
- Promoting awareness and networking is extremely difficult.
- Facing problems of unhealthy competition, slow release of subsidy, and lengthy process for submitting documents.



नोट :- प्लाण्टको विभिन्न भागहरूको नाप पढाइदि पढि विवरणको छ ।



# Solar Energy in Nepal

- The poor quality of the grid supply (load shedding) in Nepal encouraged people to buy their own solar PV home systems. In the past load shading up to 18hrs/day
- A growing demand encouraged the set-up of 71 solar companies which have installed over 600,000 systems.
- One solar company is run by a woman.
- AEPC subsidise solar PV home systems.



# Surya Jyoti Mahila Maitri Urja P. Ltd

- Surya Jyoti Mahila Maitri Urja P. Ltd ( Solar Women Friendly Energy) was established in 2007 (2065 BS) by Mrs. Kalpana Acharya.
- She has installed 2500 solar PV home systems in seven districts.
- The installation capacity of this company is about 700 systems per year.
- The company installs small (below 10 Wp), medium (10 to 100 Wp) and large (larger than 100 Wp) systems.
- There are a total of 6 staff; 2 male and 4 female.



- She was working as solar agent before establishing her own company
- All registration and renewable were done by a lawyer
- Satisfied as she has the opportunities with social activities
- Less demand- national grid has extended
- Finance is the main issues
- There should be awareness programme, loan facilities, property rights and capacity enhancement of the women enterprises.



# Surya Jyoti Mahila Maitri Urja P. Ltd

- Entrepreneur working in a very remote areas
  - has local familiarity with social activities and services.

## ➤ Business issues:

- Getting capital finance, as women do not own land;
- Keeping up with technical changes;
- Unfair competition from other companies;
- Subsidies are not paid quickly enough;
- Disposal of the batteries.



## ➤ Suggestions that would help the business:

- The loan subsidy should be for a longer time, especially in remote areas;
- Finance organisations should be more aware and supportive of women;
- Women should be able to own property and take out business loans;
- Female entrepreneurs need much more support.



# PROFILE OF WOMEN ENTREPRENEURSHIP DEVELOPMENT

- No single factor motivates women to be an entrepreneur.
- Factors encouraging women, include family support, social perceptions and attitudes towards entrepreneurship.
- Women have less access to finance and energy related services.
- Women are excluded from discussions about energy planning and policies.
- Major reasons to motivate women into entrepreneurship:
  - provide income for family;
  - improve individual welfare;
  - personal recognition and growth;
  - provide self improvement .



# PROFILE OF WOMEN ENTREPRENEURSHIP DEVELOPMENT

- The legal position of women in Nepal is mixed.
  - Constitution declares women equal;
  - Family laws give economic rights to men, not women;
  - The culture and tradition also limit women.
- Growth of unemployment in Nepal:
  - Labour migration mostly available for men, who can obtain jobs and send money back for family from elsewhere;
  - Majority of women stay at home.
- Lack of information for women on business matters
  - Women do not think of running own businesses;



# POLICY, LEGAL AND REGULATORY FRAMEWORK FOR WOMEN ENTERPRISE DEVELOPMENT

- The legal position of women needs to be clarified, especially in the economic area.
- Government support is needed for women entrepreneurs:
  - to encourage the idea that women can be entrepreneurs and allow women to own and run businesses;
  - to provide women with access to business information;
  - enable women to obtain loans from finance organisations;
  - improve the operation of the tax system, so it is more helpful for small businesses run by women.
- Many pressure groups working to encourage female entrepreneurship
  - Especially associations set up for the extension of renewable energies (MHP, Biogas, Solar technology).



# POLICY, LEGAL AND REGULATORY FRAMEWORK FOR WOMEN ENTERPRISE DEVELOPMENT

- Entering in the entrepreneurship is influenced by motivation, family background, economic environment, education etc.
- Business obstacles include lack of experience, lack of social capital, financial capital, risk perception etc
- These could be reduced by forming support networks for marketing , business planning and awareness creation

## **Institutional Systems:**


- Should be made aware about updated policies and plans
- Women's representations in the associations
- Women's access to information
- Participation in business promotion programmes.





# WAY FORWARD

In order to meet needs and demands of the women entrepreneurs in Nepal the government need to;

- Reduce state interference and regulations for small and medium enterprises;
  - Simplify relations between state bodies and entrepreneurs;
  - Encourage the idea of women's entrepreneurship;
  - Provide professional vocational training to women;
  - Offer entrepreneurship development to women; and
  - Establish a network of centre for skill upgrading.
  - Should focus on modern energy services, invest in low emission technology and energy policy need to take into account the need of both genders.
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*Thank You*

