Biogas Support Program of Nepal: Current Situation and Experiences/Lesson Learnt

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Presentation Outline

- Introduction
- Major Stakeholders in BSP
- Trend of biogas Installation
- Contribution of biogas in residential sector
- Approaches and Strategies of BSP
- Financial and Policy Incentives
- BSP and CDM
- Impact
- Opportunities
- Main Challenges
- Lessons learnt
Introduction - BSP

- Promotion of household biogas plant
- First biogas plant was introduced in 1955
- The BSP started in July 1992 with funding from the DGIS of the Netherlands government through SNV/N.
- GoN and the KfW also started funding the BSP from the Phase–III, which started in March 1997.
- The BSP, Phase–IV (July 2003-June 2009) is being implemented
- Fixed dome plants of size 4, 6, 8 and 10 cu³ capacities has been adopted in Nepal
Introduction - AEPC

- Government organisation under Ministry of Environment, Science and Technology (MOEST) having autonomous status
- Major programs:
  - BSP: biogas (KfW & SNV/DGIS)
  - ESAP: Micro-hydro, SHS, ICS (Denmark & Norway)
  - REDP: Micro-hydro, decentralized energy planning (UNDP, WB)
  - REP: Institutional solar system (EU)
  - IWMP: Improved Water Mills (SNV/DGIS)
Alternative Energy Promotion Centre
Making Renewable Energy Mainstream Supply to Rural Areas

Stakeholders in Biogas Support Program in Nepal (1)

• AEPC
  – National executing agency for RE programmes and projects including BSP;
  – Mandate for policy and plan formulation, resource mobilisation, monitoring and coordination;
  – Subsidy and financial assistance.

• Biogas Sector Partnership Nepal (BSP/N)
  – BSP implementation (capacity building, promotions, data base management, quality control etc)
Stakeholders in BSP in Nepal (2)

- Nepal Biogas Promotion Group (NBPG)
  - Advocacy and lobbying in favor of BCs
- Biogas Companies (BCs)
  - Plant installation and market creation,
- Financial Institutions and Local Cooperatives
  - Credit support to users
- KfW and SNV/DGIS
  - Financial and advisory assistance
Trend of Biogas Installation

Yearwise Biogas Installation

Number of Plants

Year

Before 1992
1992/93
1993/94
1994/95
1995/96
1996/97
1997/98
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07

Number of Plants

0
2000
4000
6000
8000
10000
12000
14000
16000
18000
Biogas System by Size in Nepal

- 10m³: 11.4%
- 8m³: 19.9%
- 6m³: 55.5%
- 4m³: 12.1%
- 20m³: 0.1%
- 15m³: 1.0%
## Contribution of biogas in consumption of energy in residential sector

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biogas (in 000 GJ)</td>
<td>1392</td>
<td>1620</td>
<td>1731</td>
<td>1903</td>
<td>2078</td>
</tr>
<tr>
<td>All (Traditional, commercial, renewable) (in 000GJ)</td>
<td>314,6 55</td>
<td>320,269</td>
<td>326,321</td>
<td>331,567</td>
<td>338,696</td>
</tr>
<tr>
<td>% contribution of biogas</td>
<td>0.44</td>
<td>0.51</td>
<td>0.53</td>
<td>0.57</td>
<td>0.61</td>
</tr>
</tbody>
</table>
Alternative Energy Promotion Centre

Making Renewable Energy Mainstream Supply to Rural Areas

Private Sector, the Main Player in BSP

AEPC

Policy Support

RE Awareness

Subsidy

Qualification

BSP implementation

GoN

Donor

BSP/ N

Consumer

Private Sector
Approach and Strategy of BSP

- Sector Programme Support with a long-term perspective
- Demand-driven (private sector as prime movers)
- Emphasis on quality of goods and services delivered
- Adoption of self regulatory quality assurance system
Financial Incentive to Private Sector (1)

- Secured market through subsidy provision
  - Financial subsidy is utilized as a major intervention to stimulate the market
- Provision of bonus and penalty system
- Provision of promotion fee for BCs
- Additional support for awareness creation
- Additional support to the poor through Grameen Bank Model (being piloted)
- Additional support for low penetration and remote districts
- Exemption of import tax and VAT for Gas Valve
Financial Incentive (2)

- Secured CDM resources for gradual financial self-reliance
- Secured GPOBA funding for two more years (beyond 2009) and the programme is likely to be continued by existing donors
Policy Incentive “Interim Plan (2007/08-2010/11)”

- Financial Subsidy
- Massive promotion of biogas mainly as cooking fuel and slurry for agriculture production,
- Installation of 100,000 biogas plants - 70 districts
  - 99,950 households plants
  - 50 community and institutional plants
- Increase access to low income HHs by providing additional financial support,
- Priority for appropriate & small size plants, R & D.
BSP and CDM

- Eco-securities, of the Netherlands was hired in Dec 2002 a consultant, which together with its local partner Winrock International prepare the document
- 2 biogas projects got registered with a total of 19,396 plants on 27 Dec 2005
- ERPA signed with CDCF/WB on 3 May 2006 at the rate of US$ 7
- AEPC received first payment
BSP and CDM

- CDM EB further improved the methodology, and its 34th meeting approved it for recommendation to COP13.
- The COP 13 decided to request the CDM EB to approve the methodology with some additional improvement in its first meeting in 2008. Thus the methodology will be approved.
- Actions are already underway in collaboration with KfW to develop additional CDM projects in biogas and to carbon trade.
Impact

- A household saves 3 hrs 40 minutes per day
- Annual saving of Rs, 25,499 (US$400) per HHs
- The use of fuel wood has reduced by 162kg/months/hh - nearly 2 tons/year/hh.
- 96.2 plants are operational
- Greenhouse gas emission reduction
- Reduce indoor air pollution
- Organic fertilizer reduce use of chemical fertilizer
- 70% toilet attached biogas-improve sanitation in the rural HH
Opportunities

- The importance and popularity of bio-digester increases with price hike of imported fuels such as kerosene, LPG.
- Only 10 percent biogas plants of total potential is built.
- Positive impact on health, agriculture, socio-economic condition etc of the rural HHs
- Revenue from carbon trading/CDM
Main Challenges

- Reaching everyone, everywhere, (especially poor and high hill)
- Subsidy is constant (decreasing??) but cost is increasing
- Subsidy on other cooking fossil fuel (kerosene, LPG)
- Linking BSP with local government
- Shortage of working capital for BCs
- Lack of adequate access of credit
- Gobargas rather than biogas
Lesson Learnt

• Assessed the needs and capabilities of the end users and carried out R & D → finalized the biogas design and the working modality

• Private sector key player plus regular monitoring & QC system → Success of the program

• Educational program → attached toilet to biogas plant → improved sanitation

• Additional subsidy to small size plant plus credit mechanism → increase accessibility to the poor
Lesson Learnt

- Uniform and transparent administration of subsidies important factor in convincing the farmers to purchase the biogas plant
- Carbon financing is the sustainable source for biogas promotion
Conclusion

• Massive scaling up of biogas installation and increase access to poor:
  – pro poor subsidy and credit.
• Involvement of district energy and environment unit under each DDC for promotion and coordination as well as linking with local government,
• Capacity building of private sectors and NGOs to develop them as a Local Capacity Builder
• CDM revenue, sustainable source for the sector
Abbreviations

- AEPC- Alternative Energy Promotion Centre
- BCs- Biogas Companies
- BCC- Biogas Coordination Committee
- BSP- Biogas Support Programme
- BSP/N- Biogas Sector Partnership Nepal
- CDCF- community Development Carbon Fund
- CST- Coordination Support Team
- DDC- District Development Committee
- ESAP- Energy Sector Assistance Program
- GoN- Government of Nepal
- GPOBA Global Partnership on Output Based Aid
- HHs – Households
- IWMP: Improved Water Mills Program
- MOEST- Ministry of Environment, Science and Technology
- NBPG- Nepal Biogas Promotion Group
- NPC- National Planning Commission
- RET- Renewable Energy Technologies
- REDP- Rural Energy Development Program
- REP- Renewable Energy Project
- RBCC-Regional Biogas Coordination Committee
- RESS- Renewable Energy Sector Support
- WC- Working Capital
Thank You for Your Kind Attention.