RENEWABLE ENERGY POLICIES AND INITIATIVES TO REDUCE ENERGY POVERTY IN NEPAL

Prof Dr. Govind Raj Pokharel
Executive Director
Energy Poverty in Nepal

- Energy use per capita in Nepal is about **340 kg of oil equivalent**.
- Use of energy is tied to rising Human Development Index (HDI).

**Source:** World Bank data series and UN HDI index, viewed on 09 May 2013
Consequence of Energy Poverty

- Energy Crisis has affected both economic and social development.
- Increased dependency on Import for commercial energy supply

% increase of commercial energy imported from India from year 2003 to 2012

- Electricity, 398%
- LPG, 223%
- MS, 196%
- HSD, 117%
- ATF, 105%
- SKO, -88%

- Total commercial energy import from India in FY 2011/12 is almost 25% of country’s budget

Source: NEA Annual Report 2011/12, NOC website
### Animate Energy in Rural Areas

<table>
<thead>
<tr>
<th>S. N</th>
<th>Animal</th>
<th>Average Power in watts</th>
<th>Av. Working power per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Horse</td>
<td>760</td>
<td>10 Hours</td>
</tr>
<tr>
<td>2</td>
<td>Donkey</td>
<td>200</td>
<td>4-6 Hours</td>
</tr>
<tr>
<td>3</td>
<td>Buffalo</td>
<td>520</td>
<td>8 Hours</td>
</tr>
</tbody>
</table>
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Energy Consumption and Human Civilization

<table>
<thead>
<tr>
<th>Era</th>
<th>Kg of Oil Equivalent/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primitive man</td>
<td>0.2</td>
</tr>
<tr>
<td>Hunting man</td>
<td>0.6</td>
</tr>
<tr>
<td>Primitive Agricultural man</td>
<td>1.2</td>
</tr>
<tr>
<td>Advanced Agricultural man</td>
<td>2</td>
</tr>
<tr>
<td>Industrial man</td>
<td>7.7</td>
</tr>
<tr>
<td>Technological man (23)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Modified from Goldemberg 1996
Dimensions of Poverty and Energy intervention

Empowerment
- Poor given choice to invest in RET Projects or RET based enterprises
- Make other investments

Economic opportunity
- Earn regular stream of income from RET supported activities/Projects dividends
- Earn further income

Security
- Combat economic & social vulnerabilities

Start Here!
5P-Capitalization and Ownership Mechanism

- Capitalization and ownership to be participatory in nature
- Depend on case by case basis
- One example/scenario is:

<table>
<thead>
<tr>
<th>Capitalization</th>
<th>Share</th>
<th>Ownership</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>15%</td>
<td>Private Sector</td>
<td>51%</td>
</tr>
<tr>
<td>Community</td>
<td>20%</td>
<td>Community</td>
<td>49%</td>
</tr>
<tr>
<td>Private Sector</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant AEPC/ESCAP</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rural (Renewable) Energy Policies and Initiatives

- RE Plans as Part of National Plans since 1985
- Rural Energy Policy 2006
- Subsidy Policy for RE 2013
- Subsidy Delivery Mechanism 2013
- 3 Year Approach Paper
- Single Program Modality till 2017
- Initiative to provide access to clean cooking solution to all by 2017
History of Policy formation on RETs

- RETs were first addressed by **7th five year plan (1985-1990):** Adopted policy of encouraging RETs incorporating private sector.
- **8th plan (1992-97):** Separate policies on energy and alternative energy, Involvement of private sector increased.
- **10th Plan (2002-2007):** The approach was focused on economic development and commercialization of RETs, Rural Energy Policy 2006 promulgated.
- **Interim Plan (2007-2010)**
  
  Long term vision to enhance economy and quality of life of rural people. Promotion of RETs along with CDM.
Overall goals

• Reduce dependency on traditional energy & conserve environment by increasing access to RETs.
• Increase employment and productivity through RETs.
• Increase living standard of rural population by integrating RETs with social and economic activities.
Rural Energy Policy 2006

Main Policies

- Emphasis to environment friendly, affordable and sustainable RETs
- Enhancing capacity of local bodies and facilitation
- Integration of RETs with economic and other developmental activities
- Special promotional activities focusing poverty reduction & positive impacts on women and children.
- Involvement of private sector, community, CBOs and NGOs.
Subsidy Policy for Renewable (Rural) Energy 2013

- Additional incentives to poor, women and marginalized groups and community (GESI)
- Reduce supply/consumption gap between rural and urban
- Support RET market by attracting private sector.
- Support long-term target of GoN
- Replacing subsidy by credit
Management and Coordination
(Basket funding Model)

Govt

External Development Partners

AEPC BASKET FUND

Credit/Subsidy investment CREF

Technical Assistance (TA)
Govt APPROACH FOR PROGRAM IMPLEMENTATION

**Demand side**
- Awareness & capacity building
- Technical & financial assistance
- Planning, coordination & networking
- Quality assurance, monitoring & evaluation

**Supply side**
- Manufacturing & supply
- Sales & installation
- After sales services, repair & maintenance
- Int. Quality control & monitoring

**Public sector**
- Subsidy Standards/Guidelines
- Qualification/Grading/Evaluation

**Private sector**
- Awareness & capacity building
- Technical & financial assistance
- Planning, coordination & networking
- Quality assurance, monitoring & evaluation

**Public Private Partnership**

**Users/Beneficiary**
Re Sector’s Key Outcomes

- About 14% of population have electricity from RETs
- Additional > 500 jobs each year (total 30,000 jobs)
- More than 40% reduction in fuel wood consumption by more than 700,000 households through ICSs and targeted to provide 3 million HH ICS by 2017
- More than 300,000 HHs replacing fuel-wood by biogas
- More than 500 Small and Medium Scale Enterprises in RETs sector
- Some Biogas and Micro Hydro Projects are registered in CDM EB
## Some Outcome Indicators of domestic biogas

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Indicator</th>
<th>Result (Per Biogas Plant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reduced expenditure on cooking fuel, particularly wood</td>
<td>Savings of <strong>US$ ~ 100 /year</strong> due to lower expenditures on firewood alone.</td>
</tr>
<tr>
<td>2</td>
<td>Improved soil fertility caused by the use of bio-slurry as fertilizer</td>
<td>Savings of <strong>US 20 /year</strong></td>
</tr>
<tr>
<td>3</td>
<td>Time savings due to reduced need for gathering fuel wood, decrease in cooking time</td>
<td>Savings of <strong>US$ 45 /year</strong> due to some labor days gained from the reduced time needed for cooking.</td>
</tr>
<tr>
<td>4</td>
<td>Improved sanitary conditions, cleaner surroundings and decrease in related illnesses due to the connection of latrines</td>
<td>Expenditure avoided is estimated at <strong>US$ 30 /year</strong></td>
</tr>
<tr>
<td>5</td>
<td>Improved indoor air quality resulting in a reduced infant mortality and reduction in respiratory diseases</td>
<td>Nearly <strong>75%</strong> of biogas users have reported lower incidence of diseases.</td>
</tr>
<tr>
<td>6</td>
<td>Reduction in deforestation, resulting in better quality of environment, particularly the prevention of increase in soil erosion.</td>
<td>Biogas plant saves nearly <strong>1.6t firewood/year</strong>.</td>
</tr>
</tbody>
</table>
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Thank You!!!

govind.pokharel@aepc.gov.np
Phone: +977 1 5539390
Fax: +977 1 5542397
www.aepc.gov.np