ALTERNATIVE ENERGY TECHNOLOGIES PROMOTION AND DEVELOPMENT IN NEPAL

"Green Energy for a Brighter Tomorrow"

World Green Energy Forum 2012

- Green Energy Summit-

Realization of UN- MDGs and Climate Justice through Green Energy

17-19 October,2012

Gyeongju, South Korea

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Presentation outline

- Background: Nepal's Energy Consumption Pattern
- RE Resource Potential
- Sector Capacity
- Carbon Financing and Climate Change
- Meeting Energy Needs from A/RE in Nepal

Background

SOUTH AND SOUTH EAST ASIA

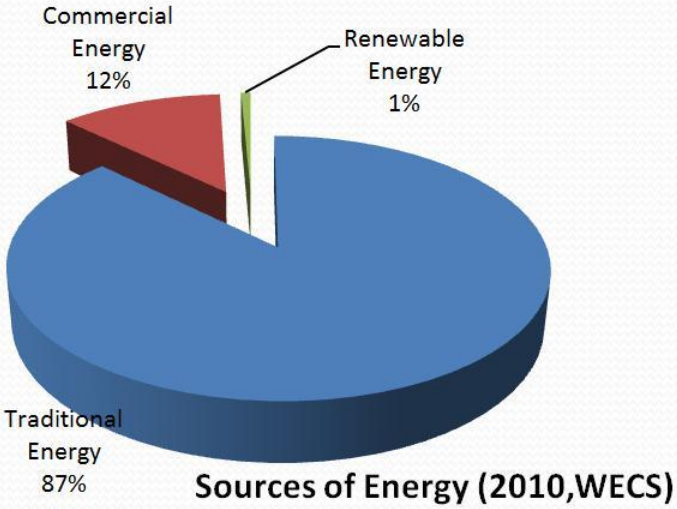
Nepal

- Location: Southern slopes of the Himalayas
- Area: 147,181 sq.km.

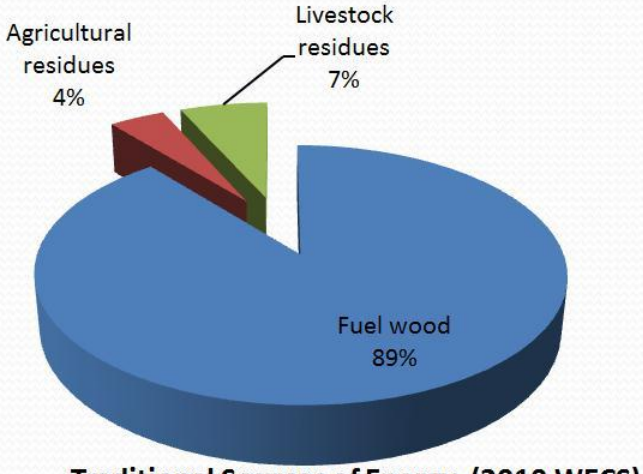
Afghanistan
Pakistan
India
Nepal
Bhutan
Bangladesh
Myanmar
Laos PDR
Thailand
Cambodia
Vietnam
The Philippines
Brunei Darussalam
Malaysia
Singapore
Indonesia
Timor-Leste
Sri Lanka
Maldives
INDIAN OCEAN
N
Map not to scale

Introduction & Energy Situation in Nepal

- Per capita income US$ 562 and 3.5% GDP growth rate
- 85% population live in rural areas (total 26.6 million) and agriculture main occupation
- Total energy consumption 11.9 Million TOE (2010) & per capita energy consumption is 14 GJ
- 60% population have access to electricity including 14% from RETs



Sources of Energy (2010,WECS)



Traditional Sources of Energy (2010,WECS)

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Issues

- About 66% of energy supplied is used for cooking
- More than 14% of households electrified through RETs
- No proven reserves of fossil fuel
- Major portion of foreign earning goes for petroleum import
- Grid Expansion is technically and financially costly
- Nepal has good potential of RE resources

Introduction of AEPC

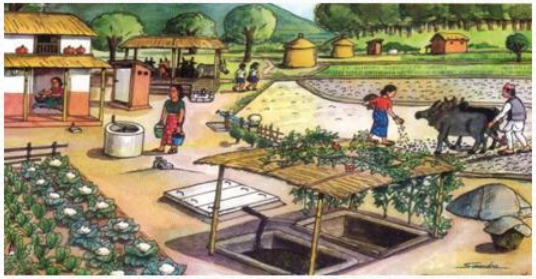
- **AEPC** - established in November 3, 1996
- **National Executing Agency** – Renewable energy (RE) programmes and projects
- **Government Institution under Ministry of Environment, Science and Technology** - semi autonomous status;
- **Mandate:** policy/plan formulation, resource mobilization, technical support, M & E, quality assurance and coordination

Alternative Energy Promotion Centre

Making Renewable Energy Mainstream Supply to Rural Nepal

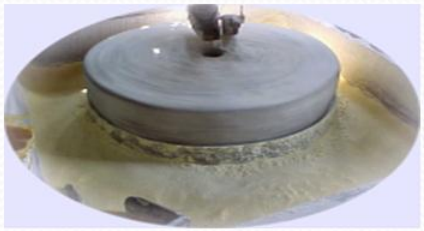
POTENTAIL AND ACHIEVEMENT

Micro-hydro (Potential >100MW & Progress ~ 20 MW



HHs Biogas (Potential 1.1 million & Progress ~0.275 million plants)

Wind (Potential 3000 MW & Progress-Pilot projects)



IWM (Potential 25,000 & Progress ~7,500)

ICS (Potential 2.5 Million & Progress ~0.53 Million hhs)

Bio-fuel (Potential 1100,000 tons & Progress- piloting

SHS (Potential 4.7 kWh/m2/day & Progress ~0.49 million hhs; 7.2 MW)

Solar dryer & cooker (3200 HHs)

Institutional Solar System/Solar water pumping (200, 000 HHs)

AEPC

Sector Capacity

Government of Nepal/ AEPC

Quality Control, Assurance, Guiding Policy, Incentives

Private Sector

System and Service Delivery

Alternative Energy /Renewable Energy Sector

Demand

Consumers

Awareness and Consumer Rights, Training, R & D

Civil Society, Academic Institutions

Nodal Agency (AEPC's Role)

Carbon Financing and Climate Change

Name of Programs/Projects	Expected ER/year	Status
Biogas Support Program – Nepal Activity-1	30,203tCO2e	Registered & CER issued
Biogas Support Program – Nepal Activity-2	31, 875tCO2e	Registered & CER issued
Micro-hydro Promotion	40,535tCO2e	Registered
Biogas Support Program - Nepal Activity-3	56,919 CO2e	Registered
Biogas Support Program - Nepal Activity-4	56,487tCO2e	Registered
Nepal Biogas Support Program-PoA	2.5tCO2e/plant	Final stage of validation
Promotion of the Improved Cooking Stove (ICS) - Nepal	1.5tCO2e/plant	Final stage of validation
Promotion of the Improved Water Mills (IWM) - Nepal	4-8 tCO2e/plant	Under Validation

Meeting Energy Needs from A/RE in Nepal

Renewable Energy

- Employment
- Drudgery Reduction
- Education and Empowerment
- Income/Savings
- Enhanced Energy Security
- Better Indoor air
- Better Environment
- Reduced GHG emission

Socio-economic benefits of RE

S. N.	Technology/Resource	Purposes			
		Lighting	Cooking/ Heating	Transportation	Productive uses (SME use)
1	Mini/Micro/Pico Hydro	✸	✸		✸
2	Solar PV (SHS)	✸			
3	Large scale Solar PV	✸			✸
3	Biogas (Dung, solid waste)	✸	✸		✸
4	Solar Thermal (Heater, Cooker, Dryer)		✸		✸
5	Biomass Based Solutions		✸		✸
6	Bio-fuel Based solutions	✸		✸	✸
7	Wind Energy	✸			✸

Public Private Partnership

Demand side

Public sector

- capacity building
- Technical & financial assistance
- Coordination
- Quality assurance

Supply side

Private sector

- Manufacturing
- Supply & installation
- After sales services
- Internal quality control

Procedures/ Guidelines **Subsidy**

Users/ Beneficiary

AEPC

AEPC's Key Outcomes

- About 14 % of population have electricity from RETs
- Additional 500 jobs each year (total 30,000 jobs)
- More than 25% reduction in fuel wood consumption by almost 600,000 households through ICSs
- More than 270,000 HHs replacing fuel wood by biogas
- More than 350 Small and Medium Scale Enterprises in RETs sector

Opportunities

- Many remote areas and below of poverty is in need of energy access
- Huge scope of credit financing
- Huge potential for Grid connection/Regional Grid/Mini Grid
- Commercialization of the RETs
- Robust quality ensuring mechanism is in place
- Promotion of the productive economic end uses

THANK YOU FOR YOUR ATTENTION

Looking Forward to Work with You!!

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