



# RURAL ELECTRIFICATION

## - *An Experience from Nepal*

National Association of Community Electricity Users  
Nepal (**NACEUN**)

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## General Information

- 500 kW first hydroelectric power plant built in 1911
- 60 percent of Nepalese do not have access to electricity
- Only 10% of people in rural Nepal have access to electricity
- 697 MW have been developed till now
- Since 1985 Nepal Electricity Authority (NEA) was sole authorized body to generate, transmit and distribute electricity in Nepal.
- Private sector involvement in hydropower development after 1990

## Rural Electrification in Nepal

Rural Electrification in Nepal has been implementing through :

- Nepal Electricity Authority (NEA)
- Grant projects (ADB, World Bank and others)
- Alternative Energy Promotion Center (AEPCC)
- Community Electricity Users Cooperatives



## Examples of Rural Electrification through Community Users Organisation

- Lamjung Electricity Users Association (LEUA) was established in 1997 under NORDIC funding
- LEUA electrified 14000 consumers
- Kailali Kanchanpur Rural Electrification Project (KKREP) – (DANIDA Funded)
- KKREP electrified 51000 rural consumers
- Khimti Rural Electric Cooperative giving electricity to 4600 households
- Private companies like Butawal Power Company
- All were donor driven approach and traditional approach

## Rural Electrification through Community Users Organisation

- **Bottom Up Approach**
- **Demand Driven Approach**

- South Lalitpur Rural Electric Cooperative (SLREC) was established in 1997 by local social activists to provide electricity to rural people.
- Enactment of Community Electricity By-Laws in 2003

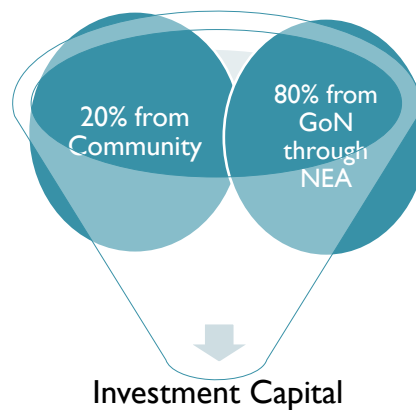
## Community Rural Electrification in Nepal

Approaches:

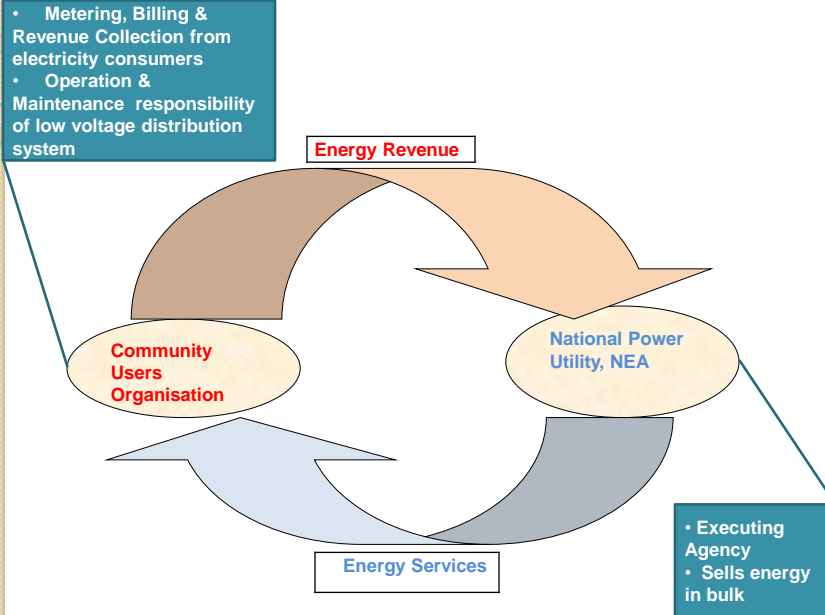
1. Community based Rural Electrification
2. Community based Operation and Maintenance

### What Is CBRE ? *Financial Model*

- Grid based Rural Electrification through community participation.



## What is CBRE? *Service Delivery Model*



## CBRE – *General Overview (Process of Overview)*

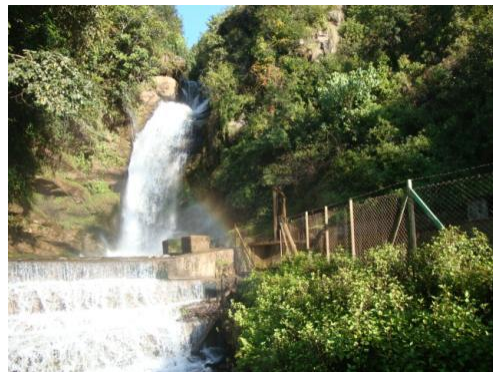
- Formation of coop/users groups registration at concern office of Government
- Proposal Preparation
- Submission to NEA/CRED
- Getting approval
- 20% investment collection
- Agreement with NEA/CRED
- NEA work as an executing agency
- Construction Through Competitive Bidding
- Supervision/Monitoring jointly (NEA/Community organization)
- Handover to Community Users Organization.

## Status Of CREEs

- Expanded in **42** districts
- No of approved projects = **230 since 2003**
- **10.2 million USD** is invested in community RE as community contribution.
- No. of CREEs in operation = **132**
- Construction on going CREEs = **98**
- **135000 HHs** have access to electricity
- **92000 HHs** will have electricity access after completion of projects in pipeline.

## Community based Generation

- Khimti Rural Electric Cooperative (KREC). Dolakha, Nepal was established in 2004
- 635 kW mini hydropower plant
- Responsibility : generation, transmission & distribution (offgrid generation)



## KREC

- **4,600** HHs have access to electricity
- Additional **3,800** HHs will have electricity after operation of Haluwa Khola Mini hydro
- KREC will have then **1 MW** capacity generation in total
- KREC service: improved education, **health**, **living conditions**, **establishing of small industry, enterprises and access to modern technologies.**



## Advantages of Community Rural Electrification

- Demand driven RE, bottom up approach
- Operating expenses nominal as compared to National Utility
- Rapid increase in consumer numbers
- Non technical losses reduced
- Technical and managerial capability enhancement
- Employment creation
- Sense of ownership developed due to 20 % share contribution, resulting in safety and security of infrastructure



## Advantages of Community RE

- Efficient Service Delivery; Services at door step
- Revenue collection is 100% and payment to NEA is always on time
- CRE has become one of the major social movement for RE / energy access
- Helping for integration of rural electrification programs into the plans of the local governments.
- Maximizing awareness of community on various issues of RE
- Community Participation in decision making process
- Access to participation in RE program to women and disadvantaged groups of society.
- Productive and institutional applications such as soft loan to address non affordability of connecting energy meters

## Lessons Learnt : Community Participation in RE

- Effective for non technical loss reduction.
- Speedy then other RE models.
- Technical Knowledge transformation to community.
- Consumers willingness increased for cost sharing
- Productive loads to supplement the household loads
- Institutional or community applications significantly enhanced. Eg: schools, health posts, colleges, medical centers, communication centers

## Example :

### South Lalitpur Rural Electric Cooperative



- SLREC has extended rural electrification services to **3650** households and **53** small scale rural industries and enterprises.

## Example :

### Small Scale Productive Applications



Maya Tamang has 4 buffaloes in addition to 1 earlier, after hand driven grass cutter replaced by electric motor , enhancing the socio-economic development of the community.

Similar other examples are:

- **Agriculture production through lift irrigation**
- **Agriculture processing**
- **livestock raising**
- **water pumping**

## Example : Clean Energy and non polluting



Ropeway operated by electricity  
(earlier by diesel)

## Example : Technical Enhancement



Technical capability has enhanced; technical persons  
of community are hired by District Development  
Committee (DDC)

## Example : Rise in opportunities for local employment



- Guru Prasad has opened a grinding mill and saves two-three thousand rupees per month, also has created job opportunity for other person in the village. Villagers remember the time when they had to miss the school in order to grind the flour are very thankful to Guru Prasad for opening accessible mill.

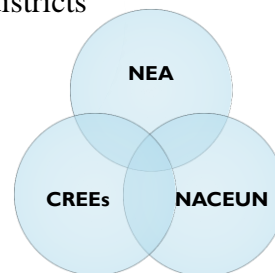
## National Association of Community Electricity Users-Nepal (NACEUN)

### NACEUN is established

- to ensure the effective role of communities in rural electrification through users' advocacy,
- institutional capacity building and
- national network building.

### NACEUN has

- 207 member organisations in 42 districts



## Role of NACEUN

- Capacity building activities and Technical assistance to CREEs
- Awareness raising campaigns
- Advocacy for policy and regulatory barriers to implement CBRE program efficiently
- Representation in preparing operation guideline
- Representation in decision making process
- Involve to stimulate the creation of economic enterprises
- Network Building

## Conclusion

Community has been showing enthusiast to participate in RE and are willing to contribute resources for RE



Enabling environment is required for increasing community participation

- a. appropriate policy
- b. legal provision and
- c. institutional arrangements

