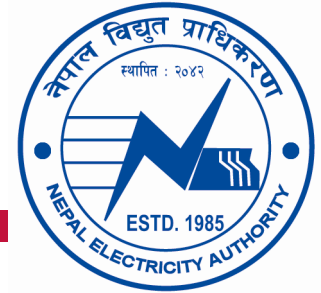


**COMMUNITY RE DEPARTMENT /NEA**



***Community Rural Electrification an  
experience of Nepal***

***DISTRIBUTION INDIA 2  
April 19-20, 2007***

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## CONTENTS OF PRESENTATION

- ❖ **Present Scene of Rural Electricity System**
- ❖ **Key features of Community Rural Electrification**
- ❖ **Demarcation of Liabilities of NEA and Community**
- ❖ ***Institutional Web of Community Rural Electricity System***
- ❖ **Planned Fund and Household Coverage**
- ❖ **Impact Assessments**
- ❖ **Next Step to Strengthen the Community-based Rural Electrification Program**
- ❖ **Conclusion**



## PRESENT SCENE OF RURAL ELECTRICITY SYSTEM

### ❖ CONSUMER PERCEPTION ABOUT UTILITIES

- ❖ Harassing attitude of employees
- ❖ Lack of accountability
- ❖ Unequal treatment
- ❖ Unfair blame
- ❖ Tariff higher than quality of power deserve
- ❖ Lower rate of capacity addition
  - ❖ Unable to meet community growing demand, causes dissatisfaction

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## PRESENT SCENE OF RURAL ELECTRICITY SYSTEM



### ❖ NEA PERCEPTION ABOUT RURAL SERVICE OFFERED

#### ❖ Long distance distribution line leads to

❖ High rural distribution losses (AT&C) ←→ up to 35-70%

❖ Low reliability of supply, Low revenue

#### ❖ Subsidized power to industrial, commercial and irrigation segment is the causes of

❖ Poor financial health

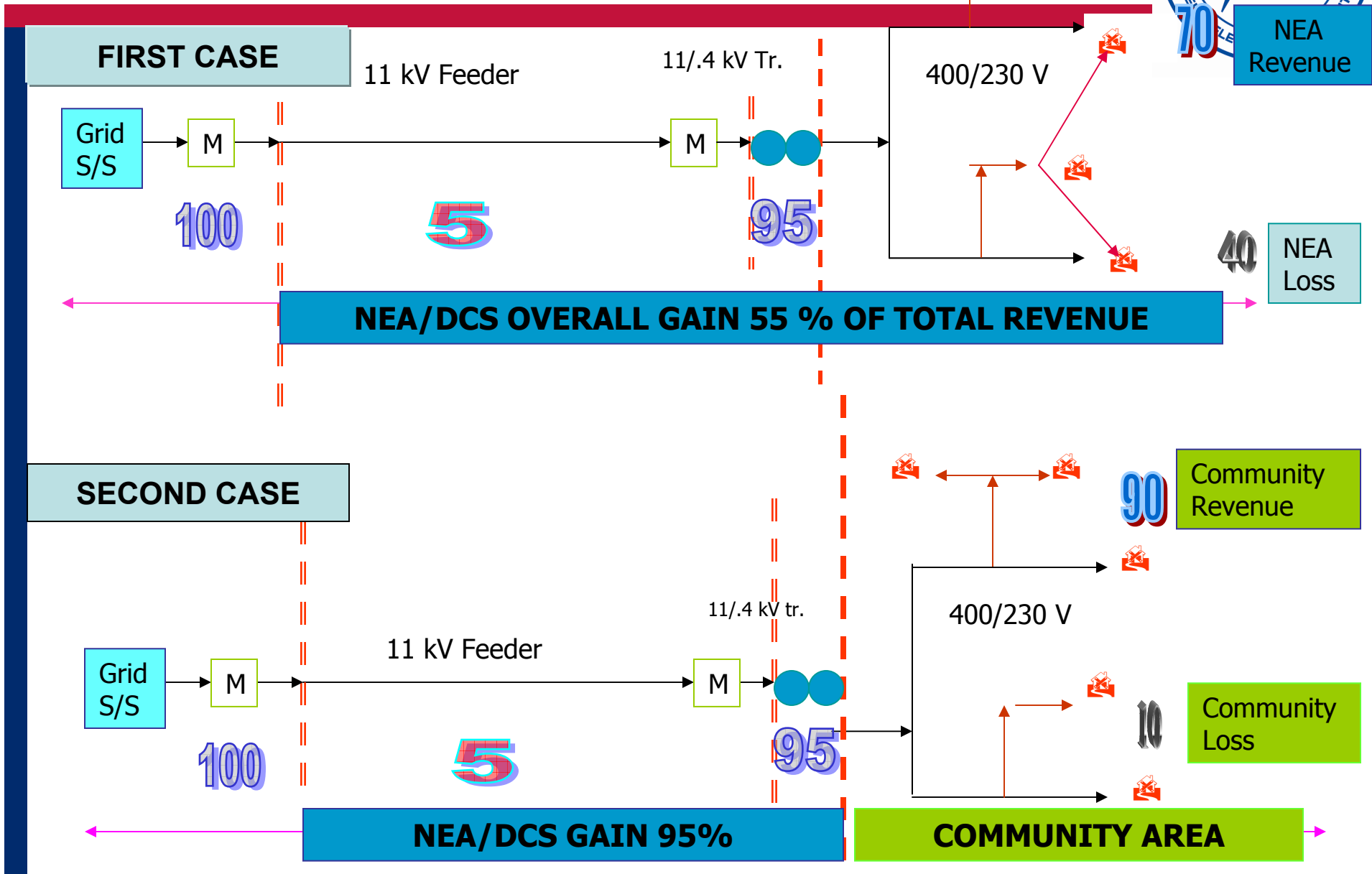
❖ Poor maintenance of distribution infrastructure

#### ❖ Irrational increase in demand of electricity is the cause of

❖ heavy capital needs and lesser returns

❖ The load factor of rural is about 16% in off-peak and in normal hour, and almost 80-98% in peak hour compared to the load demanded

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## PRESENT SCENE OF RURAL ELECTRICITY SYSTEM



### RATIO OF RURAL ELECTRIFICATION

Source of Electricity	No of districts	Total no of HH in ( "000")	% Household Connected to Electricity		
			Total	Urban/semi urban	Rural
NEA Grid and other	75		36.51	27.91	8.6
Solar and Micro hydro	-		2.88		2.88
<b>Total</b>	<b>75</b>	<b>4174</b>	<b>39.39</b>	<b>27.91</b>	<b>11.48</b>

### Rural Electrification Ratio-Development Region wise

EASTERN D Region	CDR	M-WDR	WDR	FWDR	TOTAL
6.1	10.5	5.0	8.5	4.6	8.6

### POPULATION BELOW NATIONAL POVERTY LINE (%)

SURVEY YEAR	RURAL	URBAN	RATIO (R:U)	NEPAL
2003-04	34.62	9.55	3.62	30.85

“Electricity for All” principle within 2027 in recent “Power Development Plan”.?

ANNUAL POPULATION GROWTH IS 2.5%

ANNUAL RURAL ELECTRIFICATION GROWTH IS 1% (APPROX)

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## KEY OBJECTIVE OF CRE

- ❖ Provide access of electricity earlier than expected and share its benefit with them
- ❖ Power to rural people, meeting community expectation and share their wisdom through people empowerment & advance RE technology
- ❖ Minimize operating expenses and Aggregate Technical & Commercial losses of Nepal Electricity Authority (NEA)
- ❖ Magnetism to private and Donor investment in traditional Rural Electrification (RE) through Community Rural Electrification (CRE)
- ❖ To trim down financial burden of GoN and NEA from RE



## KEY FEATURES OF CRE

- ❖ ***Demand driven RE, Bottom up approach.*** Selection of the scheme is done by (CBO's) themselves, in contrast to supply driven conventional RE Schemes.
- ❖ ***A concept of capital sharing*** is introduced under which Government of Nepal (GoN) provides 80% fund of the estimated cost provided 20% finance in advance by community as share capitalization of CBO's.
- ❖ 80% Community Rural Electrification fund (CREF) released by (GoN) to NEA and ***kept in "Community RE Fund" (CREF).*** Community contribution also held in reserve in CREF.
- ❖ Scheme is not physically launched unless the ***total funds for its completion is secured first.***

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## DEMARKATION OF LIABILITIES OF NEA AND CBO'S



**11 KV DISTRIBUTION SYSTEM  
NEA**

**400 VOLT DISTRIBUTION SYSTEM  
CBO'S**

Transformer

Sub-  
station

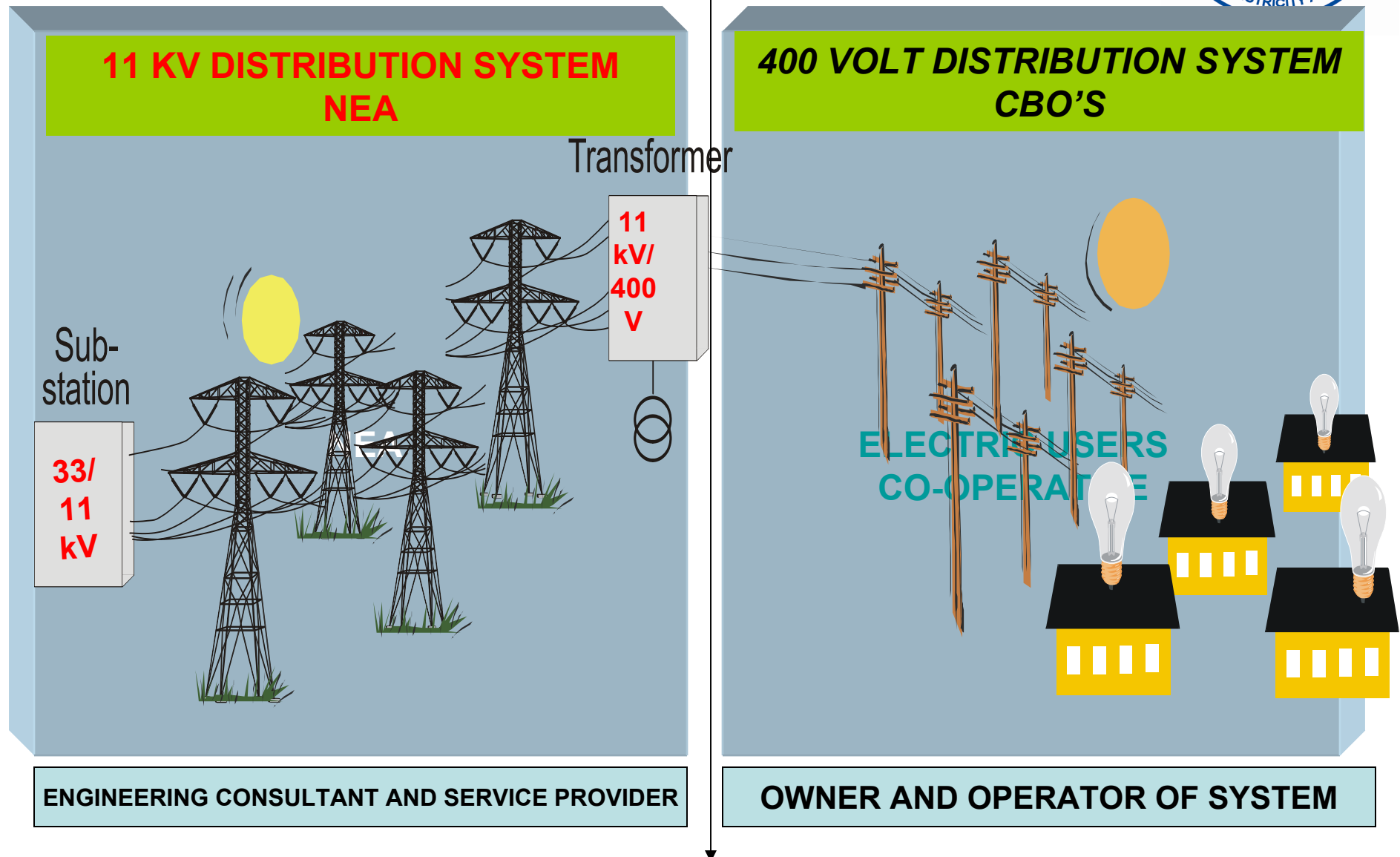
33/  
11  
kV

11  
kV/  
400  
V

ELECTRIC USERS  
CO-OPERATIVE

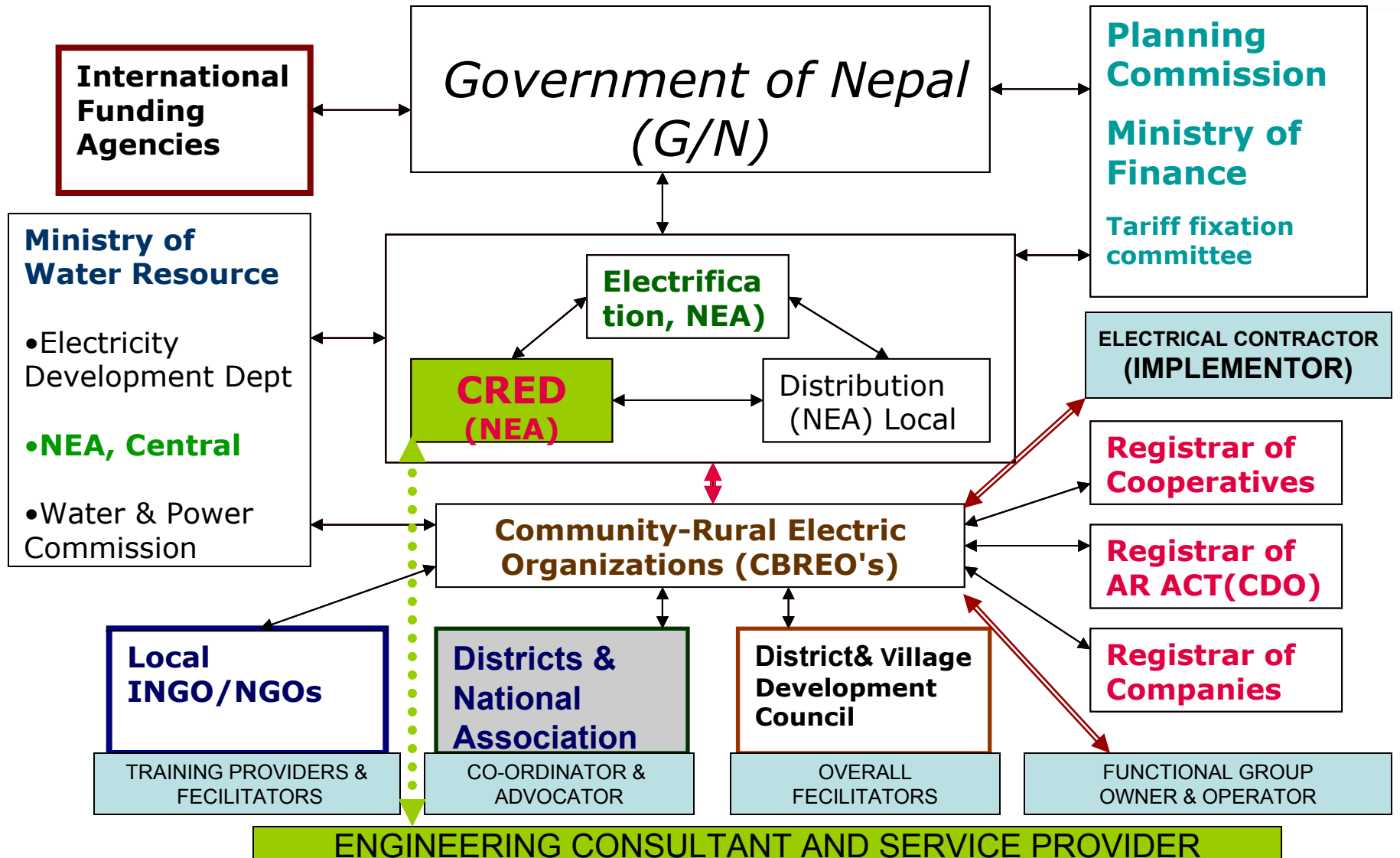
ENGINEERING CONSULTANT AND SERVICE PROVIDER

OWNER AND OPERATOR OF SYSTEM



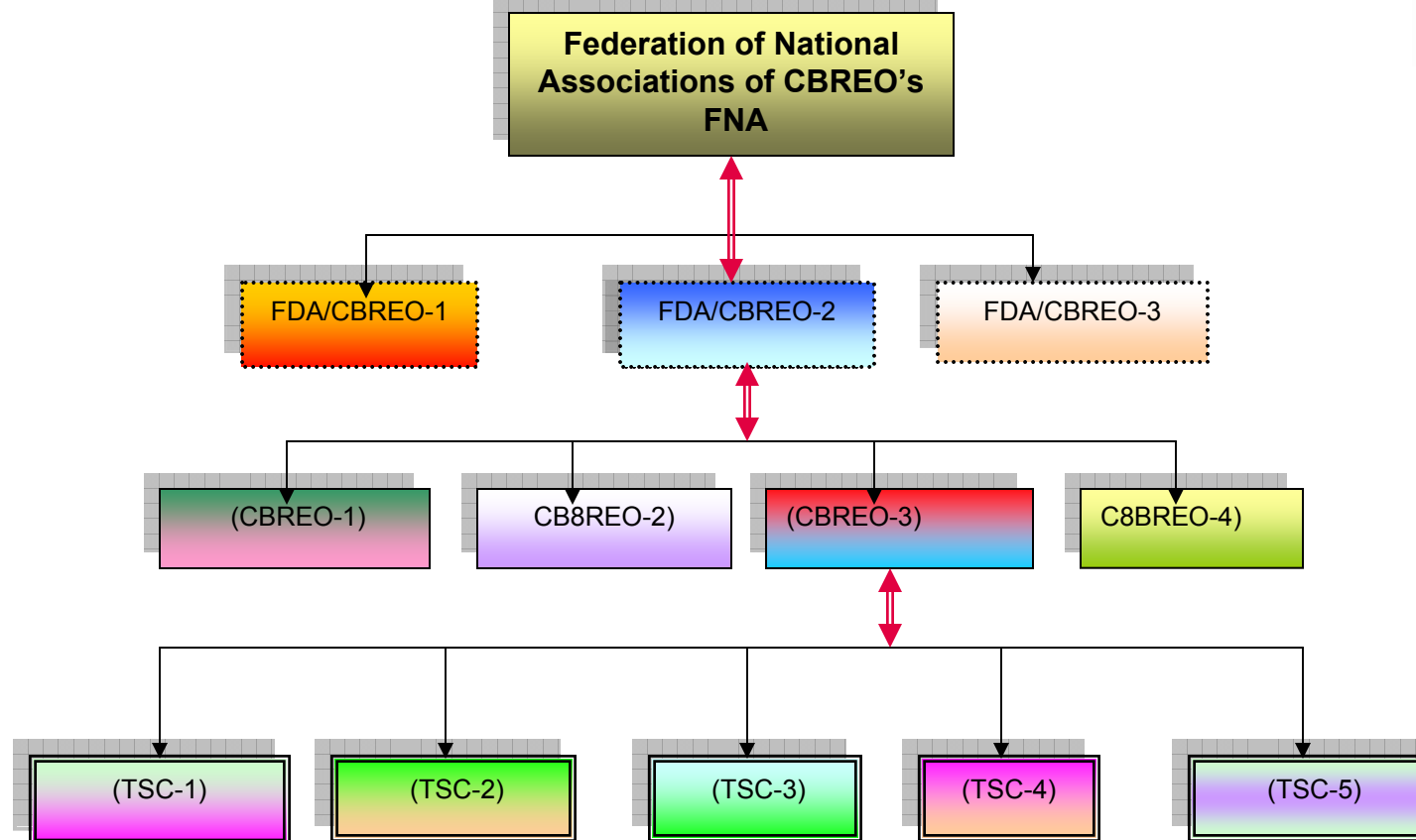
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## *Institutional Web of Community Rural Electricity System*



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## INSTITUTIONAL WEB OF CBREO's

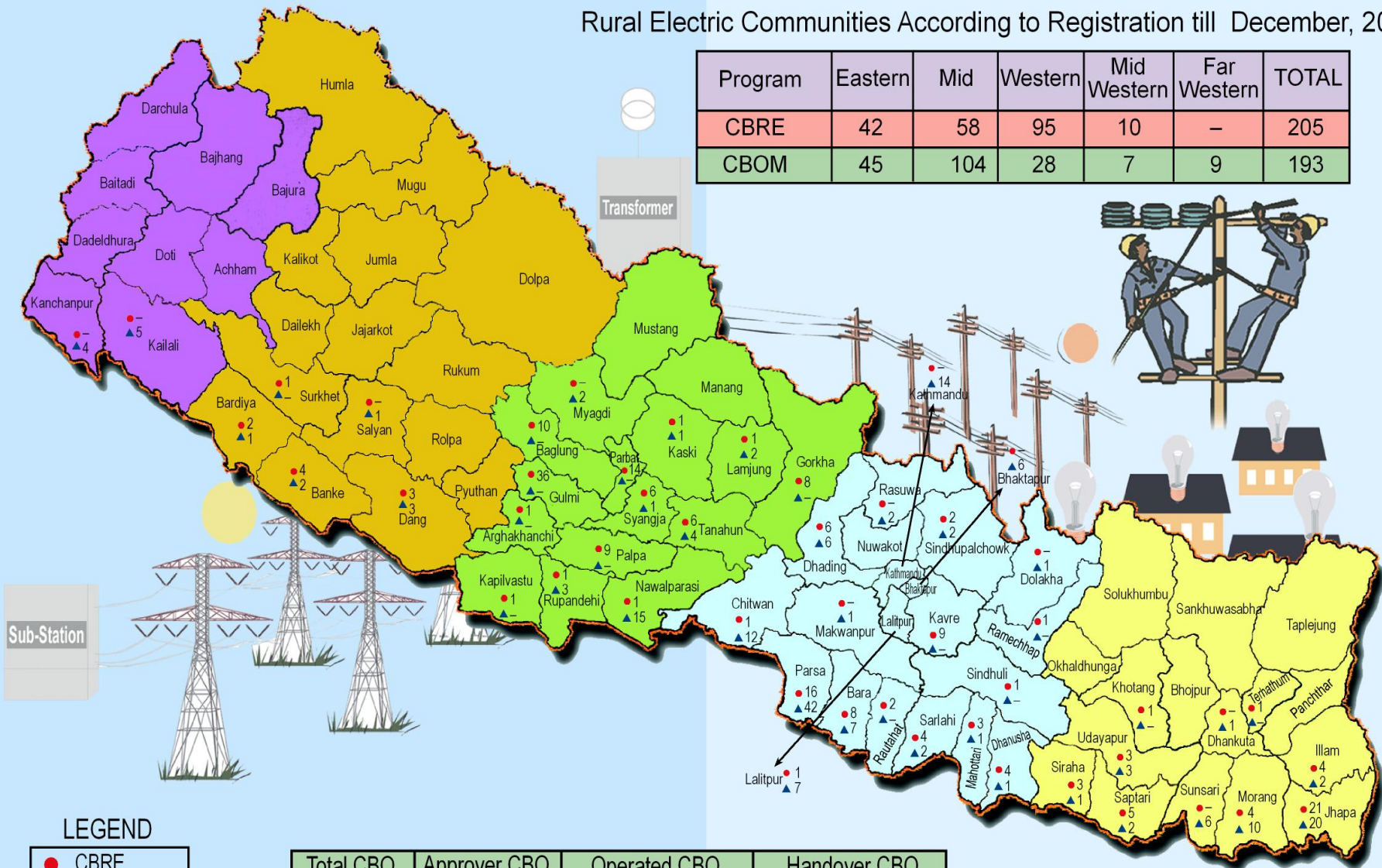


**TSC** : Transformer Sub-committee / at village level / Neighborhood / Motivator / No light group / -User Group  
**CBREO** : Community Based Rural Electric Organization / at VDC level / Functional group / -Legally Registered.  
**FDA** : Federation of District Association / at district level / Management group / Executive Authority .  
**FNA** : Federation of National Association / at national level / Advocacy Group.

# COVERAGE AREA OF COMMUNITY RURAL ELECTRIFICATION

Rural Electric Communities According to Registration till December, 2006

Program	Eastern	Mid	Western	Mid Western	Far Western	TOTAL
CBRE	42	58	95	10	—	205
CBOM	45	104	28	7	9	193



Sub-Station

Transformer



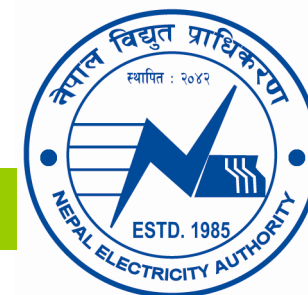
## LEGEND

- CBRE
- ▲ CBOM

Total CBO	Approver CBO	Operated CBO	Handover CBO
402	195	153	33

DISTRICTS COVERAGE -51

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## PLANNED FUND AND HOUSEHOLD COVERAGE

Description	2004/05 to 2006/07			Gap	07/08	08/09	09/10
	Targeted	Demand	Achievement				
Beneficiary HH No	130000	200000	138000	62000	50000	50000	50000
of CBOs undertaken	150	216	154	62	60	60	60
Budgetary Need in (USD)	17 M	27 M	17.6 M	9.4 M	10.9M	10.9 M	10.9 M
<b>Budgetary Gap, In (USD)</b>				<b>9.4 M</b>	<b>10.9 M</b>	<b>10.9 M</b>	<b>10.9 M</b>
HT/LT Line in Km	3000	5360	3306	2360	1100	1100	1100
S/S, Distribution Transformer installation, Nos	520	809	692	259	175	175	175
<b>COST PER HH IN (USD)</b>			<b>137M</b>				

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## IMPACT ASSEMENT

- ❖ The 20% contribution by the community has developed the sense of ownership, thus **safety and security** to national asset.
- ❖ Cheaper electricity and services on their own door with consciousness towards rural and social development.
- ❖ Release from the habits of electricity theft and ***top of that creating favorable environment for respectful life.***



## IMPACT ASSEMENT

- ❖ An average 40% -200% increase in consumer numbers. Decrease in average distribution loss to 12%, earlier the loss was of 30% to 70%.
- ❖ Average monthly per consumer consumption has gone up from 18 kWh to 35 kWh. Increase in productive end of electricity.
- ❖ Revenue has increased 200% than earlier recovered.
- ❖ Local 453 employment generation.
- ❖ Thus it is in well tune with its objective.

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## Next Step to Strengthen the Community-based Rural Electrification Program

- ❖ **Need for Strengthening of the CRED within NEA to Meet Increasing Demands of the CBOs.**
- ❖ **Need for a Comprehensive and Targeted Training Plan for both CRED Managers and Staff and the CBOs.**
- ❖ **Consider the establishment of a **Training Coordination and Management Center** within the CRED.**

# COMMUNITY RE DEPARTMENT /NEA



## Next Step to Strengthen the Community-based Rural Electrification Program

- ❖ Enact a **“National Rural Electrification Administration Act”** and create a central RE lending and regulatory authority for nation, to which all RE functions shall be transferred.
- ❖ Restructuring of the CREF for Donor and Investor Leveraging as **CREF Management and Restructuring Plan. Establish a fund “CRE Reserve Fund” to secure funding for CRE.**



## CONCLUSION

- ❖ **RURAL ELECTRICITY Distribution management is also a part of social engineering rather than electrical engineering. It can not be substituted only through advance technology but needs a *dynamic approach and strong backing*.**
- ❖ **Donors and Banks has not enough justification to invest funds in traditional RE where the risk is high and in absence of community participation high potential for failure.**

**COMMUNITY RE DEPARTMENT /NEA**



***Thus, we seek your active  
participation in the  
Community Rural  
Electrification Programs.....***

**Comments , Questions and Discussion.**

**Thank you**