WOMEN PARTICIPATION AT POLICY MAKING PROCESS IN COMMUNITY RURAL ELECTRIFICATION ENTITIES (CREE)

A Case Study of 40 CREEs in Nepal

A Thesis Submitted to
Central Department of Rural Development
Tribhuvan University
In partial fulfillment of the requirement for the
Degree of the Master of Arts (MA)
in
Rural Development

By
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April, 2017

DECLARATION

I hereby declare that the thesis entitled **Women Participation at Policy making Process in Community Rural Electrification Entities (CREES)** submitted to the Central Departmental of Rural Development, Tribhuvan University, is entirely my original work prepared under the guidance and supervision of my supervisor .I have made due acknowledgements to all ideas and information borrowed from different sources in the course of preparing this thesis. The result of this thesis have not been presented or submitted anywhere else for the award of my degree or for any other proposes. Assure that no part of content of this thesis has been published in any from before.

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LETTER OF RECOMMENDATION

This dissertation entitled "Women Participation **at Policy Making Process in Community Rural Electricity Entities**" has been prepared by Ms. Kala Timalsina under my supervision and guidance for partial fulfillment of the requirements for the degree of Master of Arts in Rural Development. I forward it for approval.

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LETTER OF APPROVAL

The evaluation committee has accepted this dissertation entitled **Women Participation at Policy Making Process in Community Rural Electricity Entities** submitted by Ms. **Kala Timalsina** for the partial fulfillment of the requirement for the Master's Degree in Rural Development

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2017-04-04

ACKNOWLEDGEMENTS

This thesis would not have been possible without the help and support of many people. First of all, I should express enough gratitude to my Supervisor, Mr. Umesh Prasad Acharya who guided me through the process, and provided valuable feedback at all stages of thesis writing. I express my sincere gratitude to the Department Head Dr Prem Raj Panta and all members in the department for providing me valuable feedback to improve my thesis.

With great respect and admiration, I express my deep gratitude to all respondents whose participation made this possible. This research would never have been possible without cooperation from respondents and all key informants.

I would like to thank my husband Mr. Narendra Adhikari, son and daughter who patiently admired my efforts and who has been extremely helpful with my research allowing me to work on odd hours and providing me supportive environment at all stages of research writing. My deep thanks go to my father, mother and all the family members who have been always inspiring to complete my research on time. Last but not least, I am thankful to my friends who supported me to collect data and also thank to all respondent who provide me the valuable time.

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ABSTRACT

Access to electricity impacts women and men differently. This thesis examines women's role in Community Rural Electricity Entities (CREEs) of Nepal, participation in policy making process and experiences of women in these CREEs. Access to electricity has definitely increased women's productive time, reduced drudgery but has not addressed women's ability to manage community based organizations in various sectors and has not yet seen women as leaders.

The main objective of this study is to find out the participation of women in policy making process of CREEs in Nepal. The study is based upon the primary data collected from the field survey. The main tool of the study is questionnaire and techniques are one to one interview. The key informant interview and focus group discussion was also conducted using the checklist. The respondents of the survey are female members in the CREEs whereas the key informant includes male and female members involved in this sector as academic, researcher, activists, etc.

Participation is a process through which stakeholder influence and share control over priority setting, policymaking and recourse allocation. This has been analyzed and from the study, it is found that females are not so active in policy making process as compared to their male counterparts. Reasons might be education level, availability of time, men seeing women in different roles, etc.

Some suggestions have been made for ways to raise women's role in policy making process. The most prominent one is raising awareness and training to women on leadership and organizational management.

An in-depth investigation could not be performed because of time limitation and access to data. Since this study included wide range of female respondents from many districts, due to resource limitation, data collection required quite a long time.

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ACRONYMS

AEPC	Alternative Energy Promotion Center
AET	Alternative Energy Technologies
ASTAE	Asia Alternative Energy Program
BET	Biomass Energy Technology
BSP	Biogas Support Program
CBS	Centre Bureau of Statistics
CDM	Clean Development Mechanism
CRE	Community Rural Electrification
CREE	Community Rural Electricity Entity
DDC	District Development Committee
DEU	District Energy Unit
DPMAS	District Poverty Monitoring Analysis System
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
GHG	Green House Gas
GoN	Government of Nepal
ICS	Improve Cook Stoves
IFAD	International Fund for Agricultural Development
IGA	Income Generating Activities
IMF	International Monitoring Fund
IWM	Improve Water Mill
KW	Kilowatt
LCD	Least Development Country
MGD	Millennium Development GOAL
MoFALD	Ministry of Federal Affairs and Local Development
MW	Mega Watt
NACC	Nepal alliance for Cleaning Cook stove
NACEUN	National Association of Community Electricity Users Nepal
NEA	Nepal Electricity Authority
NGO	Non-Government Organization
NPC	National Planning Commission
PMAS	Poverty Monitoring Analysis System
REDB	Renewable Energy Development Board

REDP	Rural Energy Development Program
REP	Rural Energy Policy
RERL	Renewable Energy for Rural Livelihood
SE4All	Sustainable Energy for All
SOD	Strategic Organizational Development
SWAP	Sector Wide Approach
UN	United Nations
UNDP	United Nations Development Program

CHAPTER- I
INTRODUCTION

1.1 Background of the Study

Electricity plays major role for a nation to march forward and raise the living standard of people. Only about 43.6 percent of the total population has access to electricity (The World Bank 2012), and this drops to just 5 percent of the rural population (NEA, 2012). The pace of rural electricity distribution has risen significantly in last six years after the introduction of Community Electricity Distribution By laws 2060 that allowed community participation in Rural Electrification activities. This by laws allowed community to contribute 20% of the total project cost against 80% by the Government of Nepal through Nepal Electricity Authority (NEA). This share ratio is now changed to 90% from GoN and 10% from community since fiscal year 2068-69 B.S. This program has achieved success in transforming the society to be more participative. It is also realized that people's participation is the vital tool to make electrification more effective, transparent and accountable. The beauty of this concept has encouraged rural people to involve in this process. Many numbers of these type organizations came into existence and a federation of these organizations was established in 2062 named National Association of Community Electricity Users Nepal (NACEUN). Although the Nepal Electricity Authority (NEA) is still a long way from connecting remote corners of the country to the national grid, local electricity consumer groups have taken the initiative to light up their communities through grid extended electricity. And the National Association of Community Electricity Users Nepal (NACEUN), established in 2005, has been at the forefront of the campaign of democratizing electricity in the nation. The rural electrification movement was first taken off before May 2003 when the NEA board passed the Community Electrification Distribution Bylaws, 2060 (2003 AD). Consumer initiatives were started since 1996 for their village electrification as a momentum to get reliable and affordable electricity and contributing to democratization to Nepali power sector. Learning from community's experiences and positive impact NEA formulated community based electricity distribution by law to formal handshake with rural community for participation in rural electrification process, capital cost sharing and distribution management of grid based electrification. This bylaw allowed community and user groups to purchase electricity from the NEA and determined that 80 percent of the cost would be covered by the government,

while the community contributed the remaining 20 percent (it has been changed to 90:10 since 2011). Under this agreement, not only are communities solely responsible for the management, maintenance and distribution of electricity, but they also get to retain all the profit. At the time NACEUN came into existence, 70 percent of rural Nepal was not covered. In 6 short years, the organization has managed to bring electricity to approximately 3, 00,000.00 rural households and another 107,000 households are in different stages of the process; some near connection, others under construction, while many more still in the pipeline. The speed at which NACEUN has reached Democratizing Electricity in Nepal. The reason behind the organization's success is that rather than the top-down approach practiced by government agencies, NACEUN follows the consumer based movement approach which is bottom up and acts as the representative of hundreds of electricity user groups, cooperatives and committees throughout the nation. Currently, NACEUN has 250 members in 51 districts and it provides them with technical assistance and expertise, lobbies for new legislation and advocates the members' interests with policy makers. It is also engaged in institutional development, end use promotion of electricity and capacity building activities. But on the grassroots level, bulk of the work is done by community members themselves thus making it a truly participatory venture. So far rural electrification has yielded numerous positive results in the fields of agriculture, rural industries, education, health, transportation, communication. Household and small-scale industries in particular have gotten a much needed impetus, children in rural schools are finally able to use technologies like computers, telephone lines have been built, villagers in remote village can recharge their mobile phones and health posts can refrigerate vaccines and medicines. In addition, direct employment opportunities for 1100 villagers have been generated across the country. Now community rural electrification has been main-stream of Nepali rural electrification. Another indication of the success of community-run electrification programs is that administration has been very efficient and pilferage is absent. NACEUN is hopeful that in the next 10 years the community electrification projects will successfully connect most households to the national grid and Nepalese will no longer have to live in darkness. However, NACEUN and its members will need the continual support of NEA and the government.

NACEUN has been involved in capacity building activities and its experiences show that women's participation in this sector is negligible and very few women have access to policy making process in these organizations. This proposal aims to seek women participation in policy making process in Community Rural Electric Entities and research based on this

proposal will try to find suggestions to make this sector more inclusive in terms of women participation. Similarly, programmes like BSP, IWMP and REDP have addressed strategic needs of women by encouraging them to involve in local energy planning, community works and associations. They are now well experienced in keeping gender disaggregated data and enhancing capacity of women not only for operation and maintenance of technologies but also handling rural energy-based enterprises. The implication of the above remarks is that rural energy policies should be improved taking into account the experiences gained from the programmes. The Ministry of Environment is kindly requested for consideration of following points in reviewing the Rural Energy Policy 2006 and other relevant policies from gender perspective. Incorporate the concept of gender mainstreaming in policy formulation. There is a need for gendered goal/objectives in energy policy. Encourage participation of women with righteous remunerations at all levels of the policy making, particularly, local and national energy planning and policy making process. Ensure that programmes/projects develop and implement monitoring and evaluation procedure with gender perspective.

1.2 Statement of the Problem

The energy is playing the vital role to the economic growth and poverty reduction. Reliable and efficient energy services underpin the expansion of economic and employment opportunities. But .the emerging issues and challenges of Nepal are suffering from significant energy poverty and pervasive energy deficits. The per capita energy consumption in Nepal is merely 14.8 GJ which is one of the lowest values in South Asian region which is one of the lowest values in South Asian region. Nepal's consumption is merely one fifth of the world's average and less than half of the Asian's average. In the context of electricity consumption, Nepal’s case is the worst with just 90 kWh per capita. (IEA, 2010). One of the main reasons for this is the fact that about 33percent of households still do not have access to electricity and those who are connected to national grid has in average more than 8 hours load shedding per day (CBS 2011). There is a stark disparity in terms of access, where almost 90 percent of urban households are connected; rural has just 30 percent (CBS, 2011). The share of traditional biomass resources, commercial energy resources and renewable energy resources are 87%, 12% and 1% respectively. Lack of modern means of usage of traditional biomass results in environmental degradation and reduced production from agro and allied sectors. There has also been adverse impact on the health of rural population mainly women and children because of in-efficient use of traditional energy resources.

So that, it is missing, the linkage between energy access and women's economic empowerment. Under what context does gender equality rise with access to electricity; what are the channels through which this change occurs; and how significant are the economic benefits to women? We believe that while there are many areas critically important for women's development, energy access is one of the most important factors for the women's economic empowerment.

Women comprise more than half of the population of Nepal, which is 50.40% in 2011 (The World Bank, 2012), but lag behind in education, health, socioeconomic, legal, and political sphere of life. Gender based differences are very common in every sector however, the degree of disparity varies. Rural electrification sector is not an exception. Electricity offer significant potential in terms of reducing women's drudgery, improving health conditions, allowing women to have enough time to be involved in income-generating, social and community development activities for their self-enhancement and empowerment. However women are always disempowered with new technology and deprived from the participation in the meetings, discussions and other decision making process. They do not participate because they do not have the knowledge to understand the talks suggesting low self-confidence among women. Also as having no knowledge on simple repair & maintenance, majority of them have to rely on male members of the family or technicians who are hard to catch when needed.

An important issue in the rural electrification is women rarely having control over resources and technology, even if they have access to the same. They are not encouraged for repair& maintenance of electrical appliances, management of electricity distribution whereas the fact is women are largely responsible and directly related to electricity functions. Switching on the bulb in the evening, plugging on the heater for cooking, plugging on the motor for water pumping are the major activities of women.

Operation and management of low voltage distribution is owned by community registered as a cooperative or an NGO. These organizations are called Community Rural Electric Entities (CREEs). In over 250 CREEs, it is said that only two are led by woman. Whereas other female members who is to fulfill the mandatory allocation in executive committee of CREEs are almost passive in terms of Policy making and participating in electricity related discussions.

Research Questions based on problem statement are as follows:

- What is the status of women in policy making process in Community Rural Electricity Entities?
- What are the encouraging factors that play important role for women for active participation in the Community Rural Electricity Entities?
- What is the socio economic status of women in Community Rural Electricity Entities

1.3 Objectives of the Study

The overall objective of this study was to identify women's participation in Policy making process of Community Rural Electricity Entities. The specific objectives are:

- To assess the participation of women in policy making process in Community Rural Electricity Entities
- To find out encouraging factors for women participation in Community Rural Electricity Entities
- To examine the socio-economic status of women working in Community Rural Electricity Entities

1.4 Rationale of the Study

Women, particularly among the rural communities who do not to have access to modern energy sources, like electricity, solar, biogas etc .They are spending a lot of time for collecting the traditional energy for cooking ,lighting and others. Empowering women is necessary for the development of renewable energy and energy security. Gender perspectives need to be incorporated into energy policy to overcome the present situation of energy. So energy policies need to be designed in ways that benefit both women and men.

Electricity has potential to save the metabolic energy and the time of women, which could be used for other productive activities. Women when engaged in income generating activities enable them to be socially, psychologically and politically empowered. Hence, rural electrification is one of the central areas where women's roles and responsibilities should not be underestimated.

Therefore, in rural electrification, women participation should be increased actively in every policy making process and women should have equal opportunity to participate in any technical and non-technical works.

This research study will do institutional surveys in which exact number of women involvement in these CREEs would be known. The study will give the importance to find out the actual condition of women in CREEs in terms of socio-economic status and their participation in Policy making process of CREEs. This study will be very useful for those individuals and institutions, who are interested to know about women's participation in Policy making process of CREEs. The researchers, students, academia, government agencies, non-government organizations would be greatly benefited from this study.

1.5 Assumption and Limitations of the Study

Community based rural electrification bylaw was endorsed in 2060 B.S. Although there is a growing literature on energy and gender, many researches are not yet done to access women participation in this sector. The focus of literature is mainly on rural women, reduction of drudgeries, renewable energy technologies but not on grid based rural electrification by community. Also, very fewer efforts are made to promote women participation in this sector. Hence very limited literatures are found in this issue which is a limitation to carry out the study. Further, as objective of this research study is to access women participation in CREEs but as these CREEs which are already in operation are spread over 30 districts across the country, it took quite a long time to collect data from the field which delayed the research study. Also, female respondents were hesitant to respondent to survey questionnaire in the beginning which took quite an effort to convince them about the objective of research and their important contribution for this research.

1.6 Organization of the Study

The study has been divided into five chapters. The first chapter deals with the background of the study, problem statement, objectives of the study, rationale of the study, limitations of the study and organization of the study. The second chapter presents literature review of women participation in different sectors and also includes conceptual framework of the study. Third chapter outlines the details of the methodology applied for the study. Research design, sample size, data collection techniques and data analysis has been explained. The fourth

chapter deals with data analysis and findings and the fifth Chapter discusses about summary, conclusion and recommendations.

CHAPTER–II
LITERATURE REVIEW

2.1 Status of Women at Policy level

Various literatures have been reviewed during the preparation of proposal; thesis writing and following statements are narrated below:

Sex is the biologically determined differences between men and women for e.g. visible organs that distinguish men and women, whereas gender is the socially determined expectations for what it means to be male and female, it is caused by the psychological and social development of individuals within a society. (Bhattarai, 2006)

Gender is a relatively new concept. It is the socio- cultural definition given to girls and boys, men and women. While nature makes us biologically male or female, society makes us socially feminine or masculine. It is gender and society which determine the appearance, attitudes behavior, roles, responsibilities, rights access and control over resources etc. of girls/women and boys/men. Expressed in another way gender is a social construct and refers to Norms, Values, Customs and Practices by which biological differences are transformed and exaggerated into a much wider social system. Because of the presence of patriarchy there is gender- inequality in the present world.(Bhasin,2004)

Traditionally women's responsibilities have been restricted to home for cooking, cleaning, child rearing and looking after the house. Women are considered to be week, vulnerable and dependent on men (Gurung, 1999). Women have very low participation at Policy level, 70% of household related and external decision are entirely made by male member of house (Acharya 1999). Women in Nepal as elsewhere hold the work responsibilities of reproduction, house holding and farm work. However reproduction is not treated as work and house holding is not considered as productive work. By government system women also suffer from discriminatory practices in opportunities for education, personal mobility, which is required among others for skill development and independent decision making (UNDP, 1995)

The UN (1995) defines the status of women in the context of their access to knowledge, economic resources and political power as well as their personal autonomy in the process of Policy making. When Nepalese women's status is analyzed in this light, the picture is

generally bleak. In Nepal, the proportion of women involved autonomously in social and public activities is extremely less. Women are underprivileged, underrepresented and exploited in all spheres of society. Socio-cultural, political, economic and educational factors have forced them to live subjugation by men. The Nepalese economy is still predominantly subsistence agriculture with 86 per cent of the total population living in rural areas and 81 per cent deriving their livelihoods from agriculture. National agricultural productivity is low although it accounts approximately 60 per cent of GDP and 75 per cent of exports.Nepalese women bear great burden in household chores and agricultural activities. A study of rural women's work burden reveals that women contribute 74 per cent of the labour input to subsistence economic activities and 86 per cent of input to social and domestic work. Statistics show that rural women's total work burden is extremely high that at an average of 11.44 hours per day in contrast to 8.34 hours per day for men (Acharya and Lynn, 1981). Women work relatively harder than the men. Production in the absence of women's participation is beyond imagination. Women reserve the grain, look after the livestock, grow vegetables, transplant crop saplings at the start of the plantation season and then again reap, thresh and clean the harvest. Such activities are not restricted to the village economy alone, they are also equally involved in the development works. They also play significant role in national economy. They currently constitute approximately 40 per cent of the total work force in the country. However, women occupy the low status jobs and are paid less than men. The 1991 population census report shows that women still lag far behind men in high status jobs. Poverty is endemic in Nepal. According to the National Planning Commission, 40.3 per cent of the population in 1998/99 was below poverty line and the number of women living below the poverty line is much higher. Based on the Nepal Human Development Report (1998), it is estimated that 48 per cent of women are living below the poverty line. It reveals the fact that poverty is not gender neutral in Nepalese socio-economic context and has affected women more than men.The reason behind greater extent of poverty among women is the pervasive disparity between women and men in all aspects of development indicators. Women have less access to education, health services, credit facilities and productive employment opportunities. Similarly, women have limited access to economic resources. The absolute number of poor has increased in the rural areas. As gender disparity in rural areas is much more severe and rural women are much more deprived, increasing number of poor in rural areas implies further feminization of poverty. Due to built-in inequities of the existing economic system the micro impact of macro policies have hardly helped the poor women. Lack of access to resources is the fundamental factor for women's greater deprivation.

Absence of property rights has adversely affected poor women from creating self-employment and generating independent income. The major women and poverty issues are related to the various socio-economic factors. Persistent patriarchal attitudes and practices are detrimental to women and hinder their empowerment. Social discriminations against women have caused feminisation of poverty. Land distribution, population blooming and determining terms of trade and structural adjustment programme imposed by the IMF in the 1980s have also the significant impact on the livelihood of rural women. Other reasons for feminization of poverty are; failure of macroeconomic policies to address women poverty at the grass-roots level and the negative trickle-down effect, lack of good governance, slow processes of reaching women living in the rural areas, poor mainstreaming of credit programmes for women through both public and NGO sectors, low participation of women in the formal sector, women's employment mostly in the informal sector as unskilled and low-paid workers and exploitation of women due to heavy household as well as farm work load. Poverty alleviation has been the priority of the government in the last decade and in the latter part of it the women are the focus of poverty alleviation programmes at the grassroots level. Rural women are made the primary group for micro-credit programmes and saving-credit activities. However, the women poverty is deeply widening further. Furthermore, Government interventions are mainly based on the conventional approaches of utilizing women's spare time for the economic benefit of the family.(Women Skill Development, 2014)

Women comprise more than half of the population of Nepal, but lag behind in every socioeconomic, legal, and political sphere of life. Coinciding with the large geographic variation of the country, there exist considerable differences in traditions and the culture of the different ethnic communities on women’s mobility, marriage options, and access to resources and social status (Acharya, 2001; Bhattachan, 2001).

Women in rural Nepal are heavily involved in managing household energy systems. They spend a large proportion of time and energy collecting firewood and processing food grain. For instance, mountainous women in rural Nepal spend four to six hours in collecting a bundle of firewood. Being the primary users and managers of household energy, women are very careful in ensuring efficient use of energy. Indeed they possess indigenous skills and knowledge in production and management.

Despite this reality, Nepalese planners and the policy makers, -who are often the male - rarely consider rural energy problems from the perspectives of women. Rural energy interventions

are planned and designed with the aim of saving fuel rather than reducing the human drudgery or opening up the new opportunities for men and women. This paper analyses the issues and challenges facing the rural energy sector and makes some policy recommendations with a focus on gender based plans and policies. A gender sensitive planning framework indicating long term goal, medium term objectives and relevant indicators has been designed to provide the planners with a basis to integrate gender into rural energy planning and policy at present, the energy policymakers in developing countries have placed more emphasis on large energy projects, such as the construction of large hydropower plants, which focus on electrification and give relatively little attention to meeting other household energy needs such as energy for cooking. For instance, Community forestry programmes in Nepal were designed towards preserving local forests, could potentially address the cooking energy needs of rural communities, however the preference seems to be towards timber production rather than firewood production. The challenges remained for integrating the sustainable forestry with livelihood promotion especially for the poorest of the poor despite its potential for significant economic growth with high value timber and non timber products (Kanel and Dahal, 2008). In addition, the environmental impacts of commercial and illegal logging (the major causes of deforestation, soil erosion and degradation) have been largely overlooked by policy and law makers in Nepal. Most of the energy interventions in Nepal have been targeted at economic growth. For instance, the Alternative Energy Promotion Centre1 (AEPC) in Nepal has no clear policy agenda with regard to community energy plans and policies as well as for implementation of the energy projects except on its role of managing the donor funds and subsidies for alternative energy technologies (Mahat, 2009). Although AEPC supports the executing agencies such as BSP and REDP for an effective delivery of services with its central focus to promote the renewable energy technologies, its policy has a little say on participatory planning at local level to incorporate the energy needs and priorities of both men and women.

There has been little effort to bring gender perspectives into energy policy analysis in order to achieve an equitable outcome of sustainable development even with the growing attention to link gender and energy. Energy planning, without its integration with social indicators, such as women's empowerment and poverty reduction, has limited impact on the overall development of the community. Most rural energy interventions in Nepal under the Tenth Five Year Plan (2003-2008) make no linkage between energy and women's empowerment

However, in environmental policy, the plan has underlined gender sensitization and building women's capacity and leadership in order to ensure access to and control over resources related to forestry and soil conservation. The rural energy policies (REP) based on REDP (Rural Energy Development Program) model aims at promoting clean energy technologies (such as micro-hydro, solar and wind energy, biomass energy), however, there is a little attention on human aspect for reducing women's drudgery (REP, 2006). In addition, the energy policies in Nepal have a least focus on biomass energy policy, which is a prior concern of majorities of rural population and especially women as producers and managers of household energy system (Practical Action, 2009).

Although the renewable energy (RE) sector acknowledges the need for AETs to promote better energy services in rural areas it does not recognize women as beneficiaries, participants or agents of alternative energy generation and development. Nepal's policy statements for both traditional and RE technologies are completely "gender blind" in their situational analysis, setting of objectives, and identification of strategies (Bhadra, 2004). Such policy situations imply that gender concerns are not a matter of priority for policy-makers which is the greatest challenge for addressing the gender issues in the energy sector. In the Tenth Plan (2003-2008) , there has been an effort to address the renewable energy issues by focusing on the short term vs. long term energy plans that call for increased coverage of biogas plant use in the short term and the integrated use of micro hydro plants for cooking in the long term (NPC, 2008). However, such plans need to be developed with other sectors' policies in mind.

Given the socio-economic conditions of rural households in Nepal, even subsidized energy plants are not accessible by the poorest section of society unless they are made pro-poor. Any new interventions on household energy have to be integrated with a package program such as market and credit facilities, user-directed training on the use and maintenance of technologies, and a phase-wise monitoring program in order to ensure the affordability, adoptability, and reliability of new technologies.

In rural areas of Nepal, energy needs at the household level are directly related to women's workloads and their time. For instance, women in rural mountain areas still spend five to six hours in collecting firewood and two to four hours in processing grains (Mahat, 2004). The women's metabolic energy is often made invisible and
almost forgotten by the rural energy planners. For instance, water mills for grinding grains fall under the energy sector, whereas women doing the same task with other indigenous

technologies do not. Ignoring man energy disadvantages women in particular, since women provide more labor and longer hours in managing the household energy system (Cecelski, 1995;Clancy, 1998). In addition, there are reported cases where women have been raped while collecting firewood especially in areas of civil disturbances such as refugee camps (Haile, 1991). In Nepal, and also in some parts of Africa, storing large amount of fuel wood is considered as a symbol of a good daughter-in law,regardless of the heavy burden this places on women (Nyoni, 1997). In many cases, uterine prolapsed among rural women in Nepal is attributed to carrying heavy firewood and similarly women often face a risk of miscarriages with such heavy workload (Earth and Staphit, 2002; Haile, 1991; UNDP, 1997). A study in Nepal indicated that highest percentage of infant mortality is associated with ARI, which is mainly caused by indoor air pollution (Pandey, 2003). Similarly, the girl children are kept out of school to assist in wood collection (Clancy, 2000).Another important issue in the energy sector is the gendered access to and control over energy resources and technology. Women rarely have control over resources and technology, even if they have access to the same. While men select the land (location) for installing the biogas plant. Yet women's involvement in selection of the location is very important since they are the ones involved preparing for operating the gas plant for example, fetching water, carrying dung from the stable and so forth (Author's personal observation, 2002).Since women and men have different roles, needs and interests, the rural energy technologies have different implications and impacts on men and women. For instance, installation of biogas plants has direct positive effect on cooking, collecting water and firewood, and cleaning utensils. At the same time, it also adds to the women's workload in collecting water and grasses for stall-feeding and changes the working structure of women (Gongal and Shrestha, 1998). Hence, the positive effect of having biogas has to be compared with its negative consequences when planning such technologies from a gender perspective. In addition, women value the convenience and smokeless state of the plant, while men value the manure benefit and the social status of having a biogas plant (Dutta, 1998).Energy analysts and policy makers at a macro-level have not paid enough attention to gender issues and the little attention that has been paid in this regard is confined to the household sector (Parikh, 1995:746). However, much of women's work goes beyond the household sector and spills into agriculture and food processing, services and manufacturing (Cecelski, 1991).

Women play key roles in the collection, management and use of energy resources and technologies and thus their indigenous knowledge and skills become immensely important in planning and designing rural energy technologies. Despite knowing the above facts, the majority of energy planners (normally male) rarely sit down with women for whom they are planning and discuss the problems from their perspectives (Skutsch,6 1995:3). Women's expertise in management of energy resources has beendiscount ed as irrelevant to energy policy and planning (Cecelski, 1992: 8).Rural energy policies in Nepal are mostly influenced by an interest in reducing fuel-wood consumption and increasing modern energy supplies in rural areas rather than saving the human energy (which mostly comes from women) that could be best utilized for other productive activities. For instance, women could use their free time to be involved in small-scale activities, like knitting, weaving and other cottage industries, which help them to generate more income. Hence, women have practical gender needs to meet the daily household energy requirements, while they have strategic gender needs to gain their self-confidence and independence by having access to time and opportunities. Unless women's practical and strategic needs are addressed and internalized by policies and gender-based programs are planned and implemented, the rural energy programs are likely to remain in effective and unsustainable (Amatya and Shrestha, 1998:106).

As explained earlier, women are greatly involved in managing the household energy system and they are the ones who are directly affected by the rural energy crisis. Traditional firewood cooking causes faster depletion of biomass resources and add to the women's working hours in collecting firewood. Similarly, traditional modes of processing like Dhiki, Ganto, and Ghatta (water mill) consume a great deal of the time and labor of women (human energy) and increase the drudgery of women. In addition, traditional technologies have a negative impact on women's health due to the smoke from firewood and their heavy workload. Due to the limitations of traditional indigenous technologies, there is a need for an intervention, that help to reduce women's labor and time, which could be used for other productive purposes, and to improve the health conditions of women.

Such an intervention shouldthis purpose, an intervention with AETs is needed be based on ge nder concerns both at macro and micro levels in terms of recognizingwomen's roles and responsibilities and their priorities regarding rural energy and increasing the participation of women from the planning to the implementation of AETs. The focus should be on reducing

expenditure of human energy rather than only saving fuel. Hence, it is very important here to consider the practical gender needs, which fulfill the regular energy needs at household level while saving the time and labor of women, and the strategic gender needs, which provides the opportunities for women to be involved in social and economic activities for their self-enhancement and
empowerment.John Friedmann (1992) defines empowerment as providing social, psychologic al and political power. Can rural energy technologies provide all these
powers to rural women? Is it worthwhile to link empowerment with rural energytechnologies ? Women are always dis-empowered with new technology, it is impossible! However,
a contrary view has gained my support over time. Rural energy technology has potential to save them metabolic energy and the time of women, which could be used for other productive activities that enable women to be socially, psychologically and politically empowered. Energy is much more than mechanical owner that is
accessible through technology. Women expend their physical energy at the risk of their lives and their livelihoods are threatened due to their heavy workload and deteriorating health conditions in the absence of good nutrition and health services. With this concept, a link is made to relate empowerment with the socio-economic enhancement of women through AETs, which can address the practical and strategic needs of rural women. While rural women had access to all kinds of energy resources such as firewood, diesel and power mills, and also to alternative cooking technologies such as biogas stoves and improved stoves available at the household and community level. Women especially from Brahmin Chhetri groups have adequate fields to collect the firewood from their own fields unlike the Tamang women and low caste women such as Damai Kami who have only little fields for such purposes. There was a low possibility for low caste women for collecting firewood from around the fields. So women from these ethnic groups used to collect the firewood either from the public forests or steal the firewood from other private forests far away from the village. While stealing the firewood women encountered a number of risks such as slipping on the walkways while running away, and paying penalties if caught up by the owners. The availability of fodder grasses in their own fields fulfilled the fuel needs as well, since women used the fodder sticks as firewood, while the grasses were used for livestock feeding. Women were also able to access the community forests for collecting firewood. But they were mainly the dry leaves and fallen branches in the forests than accessing the good firewood. In addition, the community forests were at the early stage of development and thus there were not enough firewood in the community forests. Women had no or limited control over AETs

as having no knowledge on the repair and maintenance work. The majority of respondents could not do the repairs and had to wait for a technician who was hard to catch when he was needed.

Only a few women from different castes reported that they could do minor repair activities such as mending leakages in gas stoves, while others relied on technicians (all male) or other male members of the family to carry out such repairs. In addition, men were the major decision makers on these technologies. In this way, control over technology has shifted away from women to men. A woman in a focus group reported that if the powerhouse operator (male) were not around they would have no. It was observed that local women were very interested in participating in Alternative Energy Technologies (AETs), though they have very limited spare time for such participation. They were curious to know about the proper use of AETs and also were interested in knowing how to make small repairs, so they would not have to depend upon either technicians or other members of the family. The women's interest in participating in AETs proved they had a good potential for the development of these technologies. The men's groups reported that they encouraged women to participate in meetings and training organized for the rural energy programs. But, when talking with a few women, it was found that men do not really encourage their participation in any development activities, which would mean leaving the housework undone. Men rarely share the housework and this makes it hard for women to participate in other economic and social activities. Participation is closely linked with empowerment. As discussed earlier, Friedman (1992) suggests three different aspects of empowerment: **social power**, as having access to 'certain bases, such as information, knowledge, skills, participation in such organizations, and financial resources', **political power**, as the access to decision making, in particular 'those decisions that affect a person's own future', and **psychological power**, 'as the individual's sense of potency and self-esteem', which may positively influence his/her access to social and political power. (Mahat, 2002)

The true participation involves more than a labor contribution and representation in meetings, rather active participation is to be sought at every stage of project planning and implementation.(Vivian, 1992)

Different household and productive activities imply that women use and benefit from energy services differently than men. For example, decisions on how/where electricity and electricity services (such as information and communication technology packages) are provided to

households and communities influence women's ability to take advantage of these services. Unfortunately, despite this close link between gender and energy, women's preferences and interests are not typically accommodated in energy policy, planning and projects.

Women's involvement through active participation in project planning, design, implementation, and evaluation empowers women and gives them a stronger sense of ownership and a more pronounced stake in project success. Better access to resources also allows women to devote more time to income-producing activities and to caring for their own needs as well as those of their families. Experience has shown that access to energy services helps women:

- By freeing up their time from repetitive tasks and drudgery – gathering fuel wood, hauling water, milling grain – to providing electrical power to extend working hours. (SARIE, 2012)
- By expanding the ability for women to engage in income-generation activities. Many enterprises become viable once there is access to a reliable modern energy source: mechanical power, electricity, process heat, or transport fuel. Energy projects and energy enterprises are also a source of employment and income generation that should be made equitably accessible to both women and men.
- By making possible positive long-term, intergenerational impacts. Freed from the drudgery of fuel wood collection, children, especially girls, can go to school. Women also have more time to attend to themselves and their families, and the impact can be expected to be intergenerational. Income earned when modern energy services become available to households and communities is reinvested in home improvements, children's education, and further business development, incomes and employment.
- By empowering women. Involvement in energy activities can empower women when energy services are linked to income-generation and productive resources, when women are involved in Policy making roles in project processes, and by providing women with opportunities to gain technical knowledge.

How can we integrate gender in our program?

- Consider gender at various stages of the project cycle from planning, implementation, monitoring and evaluation
- Use gender-disaggregated indicators to track improvements in access to energy for men and women.
- Focus on technologies that reduce drudgery and improve health.
- Promote affordable substitutions for biomass-based fuels.
- Support women's role as managers of energy resources through training them to master new technologies.
- Promote women's energy entrepreneurship by building their capacity to provide, market, and sell energy services and technologies.
- Obtain men's buy-in for women's income generation and track who controls how extra income is spent.
- Encourage women's participation in the project through outreach and capacity building as well as through institutional arrangements for women's participation in community-based organizations with decision-making responsibilities.

In addition to technical training for women, small grants projects should promote the increased participation of women in decision-making about energy infrastructure and services. Projects must not only create "institutional spaces" for poor women to participate in consultative processes, but also build the capacities of women to meaningfully participate in them. The projects should set goals for women's participation and, where appropriate, develop guidelines for representation in decision-making institutions. Involving women through consultative processes and decision-making throughout the project lifecycle can mean the difference between a gender insensitive and gender responsive project.

Gender issues in electrification

- Women use energy and electricity quite differently from men. The EnPoGen Study launched by the ASTAE (Asia Alternative Energy Program) to assess the impacts of rural electrification in Sri Lanka(Masse and Samaranayake 2002) revealed that the major benefit to the women is the time they save,

through avoided journeys (taking batteries to be charged, going to the city to buy kerosene, etc.).

- Decisions on how and where electricity and electricity services are provided to households and
- Communities influence women's ability to take advantage of these services.
- Electrification can bring about significant improvements for women, through making possible home industries like basket making, net weaving and tailoring for women. Post-harvest food processing is one of the most drudgeries and tedious of rural women's tasks. Electrification of rice mills and other grain, oil and food processing facilities can reduce women's workload in the home.
- The technical staff involved in electrification projects is usually men and have stereotypical concerns about women's ability to read meters, change plugs, use electricity safely. However, experience has shown that semi-literate women have learnt about manufacturing and assembling of electrical appliances, as well as acquired skills in reading meters, billing, collect payments and repair minor faults as well.

(Masse and Samaranayake 2002 and Khan 2001)

Findings and Needs

The findings indicate the following needs:

- To routinely disaggregate energy use, supply and impacts by gender, at all stages of the rural electrification project cycle
- To document existing experiences in order to provide (a) empirical evidence of strong linkages between energy, poverty reduction and gender; and (b) examples of "best practices", models and approaches
- To encourage a dialog and interaction between "ways of thinking" in energy, poverty and gender, as well as to create capacity to work in this interdisciplinary area
- To develop new approaches to integrating energy (including decentralized supply options) with other development sectors

(Masse and Samaranayake 2002 and Khan 2001)

Ten important issues should be taken into consideration while thinking about effective community participation (Wilcox 2003):

a. Level of participation. He proposes a five-rung ladder of participation which relates to the stance an organization promoting participation may take:
   (i) Information — merely telling people what is planned
   (ii) Consultation — offering some options, listening to feedback, but not allowing new ideas
   (iii) Deciding together — encouraging additional options and ideas, and providing opportunities for joint decision making
   (iv) Acting together — not only do different interests decide together on what is best, they form a partnership to carry it out
   (v) Supporting independent community interests — local groups or organizations are offered funds, advice or other support to develop their own agendas within guidelines.

However, information-giving and consultation are often wrongly presented as participation. This can lead to disillusionment among community interests, or pressure for more involvement with the potential for conflict and delay.

b. Initiation and process. Participation does not just 'happen', it is 'initiated'. Someone manages a process over time, and allows others involved more or less control over what happens. Many problems in participation processes develop because of inadequate preparation within the promoting organization.
c. Control. The initiator is in a strong position to decide how much or how little control to allow to others. This decision is equivalent to taking a stand on the ladder — or adopting a stance about the level of participation.
d. Power and purpose. Understanding participation involves understanding power. Power depends on who has information and money, and people's confidence and skills. Many organizations are unwilling to allow people to participate because they fear loss of control.

e. Role of the practitioner. Since the practitioners (or managers of participation) control much of what happens it is important they constantly think about the part they are playing.

f. Stakeholders and community. The term community often masks a complex range of interests, many of whom will have different priorities. Some may wish to be closely involved in an initiative, others less so. It is more useful to think of stakeholders.

g. Partnership. It is useful when a number of different interests willingly come together formally or informally to achieve some common purpose. The partners do not have to be equal in skills, funds or even confidence, but they do have to trust each other and share some commitment, which takes time.

h. Commitment. People are committed when they want to achieve something, indifferent when they do not want. If people are apathetic about proposals, it may simply be that they don't share the interests or concerns of those putting forward the plans.

i. Ownership of ideas. People are most likely to be committed to carry something through if they have a stake in the idea. The antidote is to allow people to say "we thought of that". In practice that means running brainstorming workshops, helping people think through the practicality of ideas, and negotiating with others a result which is acceptable to as many people as possible.

j. Confidence and capacity. Ideas and wish lists are little useful if they cannot be put into practice. The ability to do that depends as much on people's confidence and skills as it does on resources. Many participation processes involve breaking new ground. It is unrealistic to expect individuals or small groups suddenly to develop the capability to make complex decisions and become involved in major projects. They need training — or better still the opportunity to learn formally and informally, to develop confidence and trust in each other.

As leaders, networkers and lobbyists, women have successfully influenced energy policy decisions at the local, national and international levels. Women do not necessarily have to build, operate or maintain renewable energy installations alone. More important is that

women have a role in determining the use and benefits of the project and in managing these arrangements, and that they receive and control benefits. (Cecelski, June 2000)

Women in most developing countries experience energy poverty differently and more severely than men. Without access to modern energy services, women and girls spend most of their day performing basic subsistence tasks including time-consuming and physically draining tasks of collecting biomass fuels. Access to energy is gendered: it is determined by intra-household decision-making, women's social position and the value attached to women's labour. Unequal gender relations limit women's ability to participate and voice their energy needs in decision-making at all levels of the energy system. Key areas for gender-aware energy programming include providing technical assistance to national energy institutions in setting up accountability systems and governance channels for rights claiming and supporting increased representation of women in formal energy institutions, which in turn can create a positive change of attitudes to women at all levels of the energy system. When women experience energy poverty and their energy needs are not met, the consequences are severe. As a result of time-consuming and physically draining collection of biomass fuels, women and girls' health conditions are poor, their options to earn additional income are minimal, the opportunities to improve their labour productivity are low, the options for social and political interaction outside the household are restrained, the chances of benefitting from training and extension are limited, and schooling carries high opportunity costs often making it inaccessible (especially for girls). Moreover these conditions create further barriers to women's ability to voice their energy concerns and claim rights, reinforcing women's exclusion and exacerbating the problems. All other members of the household, including men, are negatively affected when women have limited access to modern energy services. Women have a right to participate in decisions that affect their lives: gender equality in energy governance is an end in itself because all citizens have a right to play an equal part in decision-making and power-structures that affect their lives. More women in formal energy institutions can act as role models and result in a positive change of attitudes to women in other social institutions such as households and communities.

(Katrine Danielsen- 2012)

Experience shows that women and girls can save time and effort from improved cooking technology or through the provision of mechanical power for water collection, agriculture and home-industries. However, how this "saved" time and workload are re-allocated to

benefit women, for income generation for example, depends on the intra-household decision-making and gender norms and values, as well as market and income-earning opportunities. (UN 2011).

The United Nations has defined the status of women in the context of their access to knowledge, economic resources and political power and their personal autonomy in the process of decision making. Women from different caste/ethnic groups seem to possess better status than the woman from Hindu caste group. The dominant Hindu culture and the patriarchal value system of the country have influenced the status of the women as their subordinate (UNDP, 2005)

Women's confidence and self-esteem increase when they have greater knowledge, economic assets and income-earning capacity, and they are more likely to participate in both private and public decision and policy-making. Low participation is often due to stereotypes, perpetuated by both men and women, which assign women's influence to the private sphere and men's to the public. The use of quotas and positive action to increase women's participation in decision-making bodies is not enough to ensure their participation, but is an important first step. Also important is the existence of strong, inclusive women's organizations and groups. Community-based women's groups that function within development projects can be unsustainable without external support and have little influence beyond the community. Projects need to promote self-sustainability and the formation of clusters and associations capable of reaching out to decision-makers and expanding their influence. What's more, younger women, poorer women and women with time constraints can often be excluded from groups, so it is important to monitor and promote inclusion. A 2000 IFAD funded review of the impact of informal credit and savings groups in three villages in the State of Manipur found several types of positive impact on participating women. These included changed to attitude and behavior among women and men, and stronger solidarity amongst women. However, it was too early to see any impact on household income and food security. A 2000 evaluation of an IFAD supported project which established over 5 000 women's self-help groups noted several factors that contribute to the sustainability of such groups. A large number of those factors that are important do not occur "by chance", but must be built into the design and implementation of projects. (IFAD, 2000)

A number of countries have used constitutional or legislative quota systems to advance progress toward more equitable representation at the local level. The Global Database on

Quotas for Women provides information on 30 countries with quotas at the sub-national level, mostly low and middle-income countries but also several in Europe – France, Greece, and Portugal.8 In some countries, an initiative to decentralize decision-making to more local levels have provided an opportunity to establish measures to ensure the participation of women. For example, India led the way before the Fourth World Conference on Women in Beijing when its 1993 constitutional amendments to strengthen local governance included a measure to reserve one third of seats in panchayats (local governing councils) for women. Pakistan's Devolution of Power Plan of 2000 reserved one-third of seats for women at all sub-national levels.9

The Indian experience with reserved seats for women has been much studied, and it has been cited as indicating the way women's presence and participation can change politics:

"In India studies of women in panchayats attest to the myriad ways women's presence has changed local politics. There are reports that women have made the panchayats more responsive to community demands for infrastructure, housing, schools, and health. Women officials have improved implementation of various government programs, and their presence has made women citizens more likely to take advantage of state services and demand their rights. When women are the heads of panchayats, there is a greater likelihood that policies that are sensitive to women's needs will be implemented. Such effects take time to register, however. In the early stages of women's reservations, many women councilors seem merely to act as surrogates of their male relatives, but over time, they acquire the confidence and skills to act independently.

Sector-specific strategies may also deliver good results. For example, women who could be qualified for appointments to the judiciary may also be less known to decision-makers than similarly qualified men. An approach taken by Canada to broaden the field of candidates for judicial appointments was to shift from a top-down selection system to one in which those interested in an appointment are required to submit an application, which is then reviewed by committees composed of judges, lawyers and citizens. The committees determine whether the candidates are qualified before the names enter a pool for possible appointments. This has brought into the system many women who may have been unnoticed in a strictly top-down system.(McLachlin, 2006).

"Nominations Service" to support the gender balance target for statutory bodies – New Zealand

The government of New Zealand's target for 2010 is to have equal representation of women and men in the members of government statutory bodies. To achieve this, the Ministry of Women's Affairs has established the Nominations Service, a unit with 3 staff and a budget, which focuses on identifying women with appropriate experience and ensuring these women are known to decision-makers. A stock-taking in 2004 showed that significant progress had been made: 41 per cent of the directors and committee members were women (of 397 statutory bodies with a total of 2,605 members), compared to about 25 per cent in 1993. However, there continued to be differences among sectors, with higher representation of women in social development, health and related fields, and lower numbers in sectors such as agriculture, economic development and transport. The Nominations Service was able to learn from experience and to adjust strategies so that its advice and services are now sought after. This required that it develop a strong reputation among both decision-makers and candidates for the database. It has therefore developed "a rigorous 'recruitment agency' competency matching approach," providing the links between those needing skills and those with skills, and has a proactive communication strategy with potential nominees and database members (including a website that provides further information on its procedures: www.mwa.govt.nz/women-on-boards). (Commonwealth Meeting, 2006)

Through the efforts by different agencies in the field of women rights, some positive changes have been achieved at the policy level with regards to women's participation and representation. Numerous national and international declarations and policies have been passed to promote women's advancement and development (see Box-1). However, to translate these into practice still remains a big challenge. For example, whilst the Local Self Governance Act (LSGA) of 1999 introduced mandatory representation of women in local government, the absence of elected local bodies since July 2002 has resulted in the de facto suspension of the women's representation requirements of the LSGA. As a result, the important process of gender-sensitive consultations, which are a critical element for participatory development, often do not take place.

Better access to communication and greater freedom to markets; peers and the wider community have provided many women with a broader knowledge and understanding of their

roles within society. Their role as heads of households in the absence of their male relatives have by default led to society allowing them more opportunities. (UN, 2012)

Government of Nepal (GoN) has made commitments to various international and regional levels including Millennium Development Goals (MDGs), Goals of South Asian Association for Regional Cooperation (SAARC goals), sustainable development, climate change, and Sustainable Energy for All (SE4All). Besides, Nepal is heading towards upgrading its status to a developing country from a least developed country (LDC) by conducting development programme in tandem with climate change issues and by promoting green economy. Government of Nepal (GoN) began a new initiative, with a special priority, to present alternative and renewable energy (RE) giving a separate heading in plan document since the 10th Five-Year Plan (2002/03 - 2006/07). In line with the changing and transitional country context, since 11th Plan to date three-year plans have been prepared. Similarly, since the 11th Plan alternative and renewable energy has been considered as an integral part of the nationally important infrastructure development and the current approach paper for the 13th plan also maintains the same. About 70 per cent of households are estimated to be using electricity services from various sources. However, it is estimated that about 96 per cent of population are using electricity in cities as opposed to only 63 per cent in rural areas 3. Since Nepal is mostly rural, it is clear that maximum number of households is deprived of electricity. In areas where it is difficult to extend national grid, about 13% population has been provided with electricity service from renewable sources. In the energy mix of rural areas, the main place is occupied by biomass-based energy and imported kerosene. Since majority of rural settlements are scattered making it difficult to extend national grid, it is an imperative to provide services through development and promotion of alternative and renewable energy resources. Rural people have a compelling situation of relying on traditional energy resources and, as a result, mostly, women and girls have been taking the burden of collection and management of fuels from forest and other sources. Until now people are living in an illusion that they get firewood for free or at cheaper price from the forest and at the same time they are suffering from acute respiratory diseases. Facts suggest that the household energy mix is dominated by firewood. While more than 64% households use firewood in country, the proportion is about 74% in rural areas and 30% in cities4 .addressed but no such polices to encourage efficient appliance and technologies to save scarce energy. A substantial portion of electricity is misuse through theft but strong measure to implement to stop it. 4.10 Energy-sector reform and restructuring There is lack of effective

implementation of power sector restructuring programmes. Nepal Electricity Authority (NEA) is sole agency to transmit and distribute electricity in Nepal reforms in this sector include unbundling the power utility (NEA), creating an independent regulatory mechanism, and introducing competition in power generation. Especially the unbundling of NEA for its generation, transmission and distribution functions is needed. Progress has been slow partly due to delays in enabling legislation and lack of time bound roadmaps and political will. A number of policy decisions are made in this direction but poor implementation has not realised it. No major reform and restructuring power sector even after acute load shedding for many years. 4.11 Research and Development in energy There is lack of research and development activities in energy sector for national capacity building and adaption technologies. There is virtual absence of a policy that promotes research on technology promotion and use of modern technologies and to improve on the existing issues and problem for adoptive research to localize the energy technology. 4.12 Regional Cooperation for power exchange Regional cooperation can play an important role in ensuring energy security in the region. Sub-regional power trade can be an effective way of meeting energy demand by utilizing complementary technologies and power utilization patterns. By utilizing different peak times of neighboring countries, regional power trade can reduce the need for building new power generation plants in each country and reduce energy crisis. 5. Conclusion It is found that Hydropower Policy 1992 and Electricity Act 1992 are the main act and policy documents which have made different provisions of generation and distribution of hydro electricity in general. Whereas Rural Energy Policy 2006 is dedicated in the development and use of renewable energy technologies and it also covers rural electrification. These policies are made basic provision

Nepal Living Standard Survey, 2010/11, p 34. 4 NLSS 2010/11, p34 (English), and Table 3.8, p 44.

In accordance with the assumption that the governmental and other agencies have provided high priority to the renewable energy, the government is committed to formulate national renewable energy policy, strategy and acts. Sustainable renewable energy promotion will be happen with increased internal and external supports. In line with the spirit of the Local Self Governance, local government bodies and representative agencies will have their active and effective roles in renewable energy promotion. While various stakeholders or partners will have encouraging participation along with their ownership towards renewable energy

promotion, the Alternative Energy Promotion Centre (AEPC) will gradually be strengthened towards its roles in the areas coordination, regulation, technical assistance and capacity

Progress review of Three-year Plan There is a huge gap between the existing potential enormity and present level of generation of hydroelectricity in Nepal. While the present demand for electricity is about 1,200 MW, which is increasing by 70 - 80 MW per year5 . Not only that, during rainy season the electricity generation is just about 65 per cent of the present demand and that falls to half during dry season, as a result, general public are suffering from severe load shedding problem (cut out of the electricity supply). In 2008, the government declared electricity crisis and set targets to generate 10 thousand MW in ten years and 25 thousand MW in twenty years. However, the progress towards achieving these targets is not encouraging. In case of renewable energy, as far, about 36 MW of electricity has been generated comprising of 26.27 MW from micro-hydro, 10 MW from solar energy, 18 kW from wind energy and 43 kW from biomass energy. Likewise, 99 solar drinking water projects, 284 thousand household, institutional and community biogas, 2,272 solar dryer/cookers, 9819 improved water mill (IWM), and 753 thousand improved cook stoves (ICS) have been installed, and at the rate of 1,000 tonnes6 of bio-briquettes promoted. As of now, wind energy data collection and energy mapping has been completed in 9 districts and data collection is ongoing in 3 districts. Through revolving fund, business plans of 144 enterprises have been developed for 72 microhydro and 90% grant has been already released, and 65 enterprises are already upon running. In all District Development Committees (DDCs), Energy and Environment Units and Sections have been established and operationalised. Ministry of Federal Affairs and Local Development (MoFALD), under the concept of "Environment Friendly Local Governance", has taken steps to make these Units or Sections as the focal point for energy, environment and climate change at the local level. Special emphasis has been given to renewable energy in line with "Sustainable Energy for All (SE4All)" initiative. While Nepal has already started receiving revenue from the Clean Development Mechanism (CDM), the microhydros have been registered as CDM projects. Similarly, ICS and IWM are also in the process of registration in the CDM. Besides by incorporating climate change and gender issues three DDC have been supported to prepare district climate and energy plan. In order to develop CDM as an integrated and long-term mechanism in Nepal and to incorporate gender issues, a Climate and Carbon Unit has been established under the Alternative Energy Promotion Centre. With these activities, livelihoods of rural, deprived and women have been enhanced

Quantitative targets With in the plan period, provide electricity services to additional 8 per cent rural population through alternative and renewable energy resources. By 2017, achieve smokeless homes throughout the country through provision of clean energy technologies. Covering all districts, install 80,000 household biogas plants, 900 community and institutional biogas plants, 50 commercial biogas plants and 10 biogas plants from municipal waste to produce energy. Install 1.2 million ICS and other biomass energy technologies (BETs). Promote 23,000 metalic ICS (rocket type, two pot hole, three pot hole and institutional). Produce and distribute 2,000 tonnes of bio-briquettes per year. Generate 100 kW equivalent of electricity from biomass energy in hill and Tarai areas. Provide electricity services by installing 400,000 solar electricity systems in areas where electricity has not reached. Establish 8 solar mini-grid and 12 battery collection centres. Implement 200 solar drinking water and micro-irrigation projects in hilly districts. Install 1,300 institutional solar electricity systems in remote districts to run computers in schools and to run health centres. Install 2,350 solar dryers and 2,200 cookers in various districts. Besides install 100,000 city-solar electricity systems where electricity has not reached yet. Generate 15 MW (15000 kW) electricity from micro and small hydros from potential hilly districts. Establish 5 local grids by merging micro and small hydro projects in feasible areas. Install as well as improve 2,950 water mills in the hilly districts to provide milling as well as electricity services. Conduct 9 feasibility studies to connect micro and small hydropower projects into the national grid. Generate 1000 kW equivalent electricity from wind energy in feasible areas. For wind energy data collection install additional data logger in 30 locations and based on available data conduct energy mapping to prepare Wind Energy Atlas. Besides based on available data, carry out feasibility study for solar and wind hybrid technology in those 30 locations. On the basis of comprehensive feasibility study, generate electricity from wind and solar 13 hybrid technology in 20 feasible high altitude locations for rural electrification which would also involve private sector. Promote 25 wind pumps in feasible Tarai districts for irrigation. Through RET related business, create 1,300 new enterprises and improve 2,800 existing enterprises to create additional 19,000 employments for women and men. Besides implement 15,300 income-generating activities (IGAs). By integrating climate change into RE planning and gradually developing RETs as "carbon project and programmes", achieve sustained revenue generation through carbon trade. For the promotion of renewable energy, conduct various necessary research and studies as well as develop and implement policy, rules and laws. 8. Main programmes and priorities Boimass energy programme The main aim of the biomass energy programme is to enhance affordable access of low income and backward

families to alternative energy as well as increase energy efficiency. In this way, in one hand, support to environment protection could be achieved by reducing pressure on forest for firewood, and on the other hand, positive contribution to climate change mitigation could be achieved by reducing greenhouse gas (GHG) emission. In line with the target of achieving smokeless homes by 2017 throughout the country through provision of clean energy technologies, massive promotion and expansion of biogas, ICS and bio-briquettes will be done. Providing financial assistance will increase access of low income and backward families. By giving priority to appropriate and smaller capacity biogas plants, in order to promote biogas in high Himalayan region, additional studies, research and cost reduction activities will be implemented. Within this plan period 80 thousand household and 900 community and institutional biogas plants will be constructed. Similarly, in line with objective of promoting ICS, 1.2 million ICS will be installed. Besides 23,000 metalic ICS (rocket type, two pot hole, three pot holes and institutional) will be promoted. Provision will be made to produce and distribute 2,000 tonnes of bio-briquettes per year. To produce and promote biofuel, policy formulation, jatropha nursery establishment, plantation, studies and research types of work will be carried out. In this way, 100 kW equivalent of electricity will be generated from biomass energy in the hills and Tarai areas. Besides, by utilising garbage produced in cities and waste products of agriculture and forest resources, pilot projects for electricity generation will be conducted and gradually that will be oriented towards promotion and expansion. Solar energy programme Within the plan period, by installing 400 thousand household level solar electricity systems, electricity will be supplied in rural areas where national grid has not reached as well as micro-hydros are not feasible. To minimize electricity crisis in cities, 25,000 households in the initial year and additional 75,000 households in the remaining period of the plan period will be provided with subsidies for solar electricity installation. In remote hilly areas 200 solar electricity operated pumps will be installed for drinking water and small-scale irrigation. In remote districts, 1,300 institutional solar electricity systems will be installed for running computers in community schools, for lighting and running refrigerators in health centres, for running photocopy and fax machine etc. at local levels. To address the growing demands of rural areas, 2,350 solar dryers and 2,200 solar cookers will be installed. In areas 14 where electricity has not reached, electricity service will be provided through 8 solar mini grid systems. By collecting used battery of solar energy generation, re-cycling and appropriate management will be done through establishment and operationalisation of 12 collection and processing centre in line with the public-private partnership concept. Micro and Small Hydropower programme within the plan

period, the target is to generate 15 MW of electricity from micro and small hydropower projects which will be utilized to promote small and medium scale enterprises for creating local employment and strengthening rural economy on the top of household consumption. Consisting of improving the existing as well as installing new ones, a total of 2,950 water mills will be installed in hilly areas for milling of food gains. By merging micro hydro plants available in rural areas 5 local grids and 1 regional grid will be developed and connected to the national grid. In order to address the problem of electricity supply in areas which are going to be municipality and hilly district headquarters, additional 10 small and micro-hydro plants will be established. If national grid reaches to the areas where micro and small hydropower projects are in running condition, 9 feasibility studies will be conducted based on which they will be connected to national grid. In 2 locations where it is not possible to have only one kind of renewable energy technology, electricity supply will be done through combination of a number of renewable energy technologies. Wind energy programme Since various locations in Nepal are potential of wind energy development, during the plan period the target is to generate 1000 kW electricity and to prepare Wind Energy Atlas by carrying out wind energy data collection from all over the country and energy mapping. In districts where wind information as well as wind maps exist, it is targeted to generate electricity by installing micro and small-scale wind turbines. In order to attract private sector wind energy policy will also be developed during this plan period. Besides, based on available data, feasibility study will be carried out for solar and wind hybrid technology in those 30 locations. On the basis of comprehensive feasibility study, electricity will be generated from wind and solar hybrid technology in 20 feasible high altitude locations for rural electrification that would also involve private sector. Promotion of 25 wind pumps will be done in feasible Tarai districts for irrigation. Renewable energy's productive end-use programme It has been realised that renewable energy and community electrification should be utilised for positive economic outcomes. Therefore, REs will be tied up with the productive activities like micro, small and medium enterprises (MSMEs) for the improving livelihoods. Similarly, REs will be utilised for lift irrigation for increasing agricultural productivity. These activities will help improve the income of people through creation of employment. Within the plan period, 19,000 additional employments for women and men will be created through 1,300 new and 2,800 upgraded businesses/professions which would be linked to RE and RETs. Besides, various income generation activities will be carried out with 15,300 households. 15 Institutional strengthening programme While it has been realised that institutional strengthening is essential for renewable energy development and expansion, a number of

barriers have stood up as barriers. Among others policy and institutional barriers are the key ones. Although the Rural Energy Policy (2006) proved itself to be a milestone, it has been gradually realised not sufficient, and the development activities have not taken expected momentum due to lack of necessary act, law, rules and bylaws. As the technology promotion activities have become subsidy driven, in one hand, it has caused a lack of proper ownership of RET promotion activities, and on the other hand, it has exerted pressure on the scarce public resource. Similarly, due to lack of insurance for the installed technologies there is a risk of potential loss of investment in case they fail to carry out timely repair and maintenance works, orfail to re-construct RETs or system in the event of damage. In this way, the lack of appropriate combination of grant, credit and insurance, in one hand, public resources could not be targeted to the most needy class or community, and on other hand, the market price distortions have occurred impacting on ownership and management aspects. Besides, due to lack of overall energy policy, in one hand, renewable energy and traditional energy policies are considered in an isolated manner, on other hand, there is a lack of mandatory policy for connecting the isolated smaller hydropower or solar energy systems into national grid that can lead to wastage of such smaller systems. There is also lack of policy and programmes for supporting technology synchronisation and safety for connecting to national grid. As the institutional capacities for programme planning and implementation are not sufficiently strong, it has become difficult to implement comprehensive and integrated programmes at the local level. DDCs are the ultimate pillars for local development. However, for capacity building of the DEU or established under DDCs appropriately, there is a need to develop short and long-term action plans for sustainability of these Units from the managerial and financial aspects with clear vision. The 20-year renewable energy perspective plan, national policy and acts will be operationalised. In the context of the importance of roles of other cooperating organisations, especially private sector, NGOs and local bodies, and for effective implementation of Renewable Energy Policy and programmes, improvement in institutional structures of AEPC will be pursued by developing Strategic and Organizational Development (SOD) plan during the plan period. Similarly, through an appropriate Act, AEPC will be re-constituted as the Renewable Energy Development Board (REDB). Besides, essential rules and by-laws will be formulated with emphasis on essential human resource development. Likewise, necessary steps will be taken to mainstream GESI concept from centre to local levels. In order to ensure effective participation of various organisations working in the clean cooking energy sector, under the leadership of AEPC a Nepal Alliance for Clean Cookstoves (NACC) will be mobilised. Appropriate support will be provided to

various organisations involved in RE promotion for their capacity building. 16 Miscellaneous programmes RE related surveys, feasibility studies, research and development (R&D), promotion, demonstration and public awareness programme, national standard determination of equipment and materials, policy and plan formulation, training, etc. activities will be implemented during the plan period. By enhancing the capacity of RE Testing Centre's capacity and by maintaining the quality standards of equipment and materials used in RETs, reliability of services and quality standard will be maintained. For integrated development of RETs, a sector-wide approach (SWAp) will be adopted. While implementation system will be oriented towards maintaining consistency, provision will also be kept for providing space for carrying out some new and innovative activities. In order to develop RET projects as CDM and carbon projects and programmes, feasibility studies will be conducted and gradually feasible technologies will be developed as carbon projects. Consistency and effectiveness in monitoring and evaluation will be enhanced by preparing comprehensive and clear indicators based on the overall indicators included in this plan document for all levels. The indicators of renewable energy programmes will be oriented with the Poverty Monitoring and Analysis System/District Poverty Monitoring and Analysis System (PMAS/DPMAS), commitments made by the government at regional and international levels, and target of graduating from a Least Developed Country to a developing country. Besides, economic, social and environmental impact assessment of all renewable energy programmes will be carried out every two years. Since the local or village level activities are the primary focus of the monitoring, it is a highly sensitive matter as to who-where-how the bodies from the centre to local levels are involved. Similarly, how the policy actions of the centre impact on various activities is also an equally sensitive matter. Therefore, AEPC will play directly monitoring and coordinating roles at the central level. At the local levels, necessary provisions will be made as well as steps will be taken to make DDCs and representative institutions of local bodies to become active, capable and effective in local level monitoring and evaluation. As per need, necessary steps will also be taken to undertake third party monitoring by involving multi-stakeholder. The 20-year renewable energy perspective plan, national policy and acts will be operationalised. In the context of the importance of roles of other cooperating organizations, especially private sector, NGOs and local bodies, and for effective implementation of Renewable Energy Policy and programmers, improvement in institutional structures of AEPC will be pursued by developing Strategic and Organizational Development (SOD) plan during the plan period. Similarly, through an appropriate Act, AEPC will be re-constituted as the Renewable Energy Development Board (REDB).Besides, essential rules

and by-laws will be formulated with emphasis on essential human resource development. Likewise, necessary steps will be taken to mainstream GESI concept from centre to local levels. In order to ensure effective participation of various organizations working in the clean cooking energy sector, under the leadership of AEPC a Nepal Alliance for Clean Cook stoves (NACC) will be mobilized. Appropriate support will be provided to various organizations involved in RE . (13th Three-Year Renewable Energy Sector Plan by AEPC- (2013/14-2015/16))

2.2 Study Framework

Based on the review of available literature, an attempt has been made to develop a study frame work for the present study by identifying possible factors affecting the Policy making power of women. The framework includes religion, caste/ethnicity, economic status of household, education of women, occupation of women, etc. These have been taken as independent variables, which directly influence the dependent variable.

There are various factors that affect the Policy making power of women, such as, social, cultural, religious economic, etc. A conceptual framework has been developed to see the affecting factor in CREEs Policy making power of women.

There are three types of variables, which directly affect in women's policy making power which is socio-economic, religio-cultural and demographic

A socio economic factor represents education of women, occupation of women, income level of women, number of children, and education of family member. Religious cultural factors represent religion, ethnicity and tradition. And demographic factors include type of family, age of women. As stated above, these factors directly affect the women's policy making power.

CHAPTER–III
RESEARCH METHODOLOGY

3.1 Introduction

The preceding parts as in the I and II chapters presented the background of the study, literature review pertaining to the study. In this chapter, the components of research methodology are discussed. The design of any research project requires considerable attention to the research methods. Research design is described in the first section. This chapter depicts the sampling technique, data collection methodology, tools and techniques used to test the hypotheses. Relevant hypotheses are also presented.

3.2 Introduction to Study Area

There are more then 200 CREEs which have completed their electrification work and are in operation. They are registered as cooperative, NGO or a private company with an objective of operating as Community Electricity Distribution Institution. They are situated in 51 districts.

3.3 Research Design

A Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It constitutes the blue print for the collection, measurement and analysis of data. It details the necessary procedures for obtaining the information required to structure or solves research problems. The research design adopted in the study is conclusive in nature. It tests the specific hypotheses and examines the relationship. Conclusive nature is meant to provide information that is useful in reaching conclusions or decision making.

3.4 Sampling Frame, Sampling Method and Sample Size

As per available data from NACEUN, there are a total of 200 electrified CREEs which are in operation and providing electricity services. Thus the universe size is 200 CREEs and sample size is 20% of the universe i.e, 40 CREEs. A list of CREEs was prepared and their corresponding districts were listed. There are one CREE in some district and 10 CREEs in some districts. Simple random sampling was adopted and criteria for number of CREEs as sample from each district were “upto 5 CREEs in a district, one CREE was selected; upto 10 CREEs in a district, 2 CREEs were selected; upto 15 CREEs in a district, 3 CREEs were

selected. Thus 1 CREE was taken as a sample from each 5 CREEs. Respondents were selected from CREEs or the sampling has been chosen in such a way to give equal priority as well as may represent the CREEs. The following criterion has been implemented:

- Representing Terai and Hill regions,
- CREE with consumers less than 500 and CREEs with consumers more than 1000,
- CREEs registered as NGO, CREEs registered as cooperative and CREEs registered as a private company.

Research sample thus consisted of 40 women from 40 CREEs who are the board members in CREE presently.

3.5 Nature and Sources of Data

Both qualitative and quantitative data were collected.

3.5.1 Primary Source of Data

Primary data were collected from field in form of direct interview with respondent. Primary data was collected from respondent through telephone. Also, interview conducted with key informant represents primary data.

3.5.2 Secondary Source of Data

Secondary data were collected from literatures, case studies, CREE record, records in Nepal Electricity Authority and data used for other research study at National Association of Electricity Users Nepal.

3.6 Data Collection Technique

One set of questionnaire was prepared for obtaining primary data from the field. One check list was prepared for key informants' interview which included male chairman of the CREEs, executive member of NACEUN, staff of NACEUN, other professionals working in this sector. Data were also collected through focus group discussion conducted via checklist.

A pretest survey was conducted first to ensure the validity and reliability of developed questionnaires. A final set of questionnaire was developed after refinement of questionnaires and was used in the survey.

3.6.1 Personal Interview

Personal interviews were conducted through structured questionnaires. Respondents were female who the board members in the CREEs are.

3.6.2 Key Informants Interview

This included interview with key stake holders working in this sector, executive members of NACEUN, staffs of NACEUN, etc.. Narayan Gyawali, Chairman of National Association of Community Electricity Users Nepal informed that women have negligible role in community rural electrification. He says that since electricity business is male dominated, women do not prefer to stay in the leadership position. Although there have been trainings for women to enhance their leadership skills, it all depends on the local conditions and trainings has to be tailored accordingly. Also, monitoring and evaluation of women participation in CREEs is not done due to lack of resources at the national association.

Other professionals who are in this sector mentioned that level of participation is increasing in these years. Women were afraid to participate in the construction stage since it was technical sector. But once, the construction is over, it seems like women representation would be increased during operation and management of CREEs.

3.6.3 Focus Group Discussion

Focus Group Discussion was held in 2 CREEs of Kavre. Women recognized electricity as very important tool to change their life. It has reduced their drudgery. They have drinking water supply in their own village, thus they do not have to walk for hours to fetch water. Although women were in the committee, they attended meetings irregularly and main reason for that was unavailability of time. But women said it is male counterparts who have to realize the importance of women role in decision making process of CREEs. Where there are male counterparts very supportive, women feel confident to discuss issues and concerns in meetings.

However, awareness programs, exposure visits are the key recommendations from focus group discussion to improve women participation level in these CREEs.

3.7 Method of Data Analysis

After the survey, data were entered into digital form. Microsoft EXCEL and spss were used for this purpose. Analysis of data was done using these two soft wares. Data analysis included studying the data and obtaining knowledge about the existing situation of women participation in community electricity distributing institutions, examining reasons for low participation of women in this sector and suggesting ways for further increment. Since the analysis involved processing of quantifiable numbers and non-quantifiable data, a mixed wave approach including both quantitative and qualitative methods were used for the analysis.

CHAPTER–IV
DATA ANALYSIS AND PRESENTATION

4.1 Socio Economic Status of Respondents

The respondents are from different CREEs in different districts of Nepal. This chapter deals with the socio economic as well as demographic aspects of respondents of the study area. In this chapter, age, sex composition, ethnic composition, education, marital status and their occupation are included.

4.1.1 Age Composition

Age structure is the factor which indicates not only demographic but also socio economic status of the people. It makes difference in type of work such as decision making role, social relation and responsibilities. Thus age factor is an important element that plays important role on Policy making power.

All the respondents of this study are of different age groups. The age group has been divided as 1-25, 25-35, 35-45, 45-55, above 55.

Table 16: Age Composition of Sample Respondents

S.N.	Age Group	Number	Percentage
1.	1-25	2	5
2.	25-35	9	22.5
3.	35-45	17	42.5
4.	45-55	5	12.5
5.	55 above	2	5
6.	Missing	5	12.5
	Total	40	100

Source: Field Study 2016

From the analysis, it is found that the highest percentages of respondents are of age group 35-45 years and 12.5% of respondents did not provide answer when asked about their age.

4.1.2 Caste Ethnic Composition

Analyzing the representation status by caste and ethnic groups shows that Brahmin had the highest representation whereas Dalit and Tharu had the least representation. This shows that social inclusion needs to be addressed.

Table 2: Distribution of Respondents by Caste Ethnicity

S.N	Caste	Number of Respondents	Percentage
1	Brahmin	13	32.5
2	Chhetri	9	22.5
3	Dalit	3	7.5
4	Newar	5	12.5
5	Magar	3	7.5
6	Limbu	3	7.5
7	Tharu	4	10
	Total	**40**	**100**

Source: Field Study 2016

4.1.3 Literacy Status

Education is a force for social and economic development and is a key indicator for reforming society and upgrading its economic and social status. Education enhances the ability and capability of human being to judge for right and wrong. It increases the quality of life. Directly or indirectly affects the socio-economic variables such as health condition, living standard, income, occupation and many other aspects of human life. It plays a vital role to increase women participation in every sector of development.

The Table 4 below shows the educational status of the respondents which is divided into 5 categories, which are illiterate, below SLC, Higher Secondary, Undergraduate, Graduate, Those who only can read and write but not having school education are kept in literate. Below SLC represents the education level until School Leaving Certificate, Higher Secondary includes the level from SLC to 12 grades, Undergraduate includes from 12 grades to the bachelors level and Graduate includes until Masters Degree in any discipline.

Table 3: Education Status

S.N	Education Level	Frequency	Percent
1.	Illiterate	1	2.5
2.	Below SLC	15	37.5
3.	+2	13	32.5
4.	B. Ed	5	12.5
5.	BBS	2	5
6	BA	3	7.5
7	Master	1	2.5
	Total	40	100

Source: Field Study 2016

Educational status of the respondents were collected which revealed that the highest percentage of respondents belongs to the category of below SLC. Little less were respondents having education at +2 which is 32.5.% of the respondents.

4.1.4 Marital Status

Marital status of women has strong association with participation of women in any Policy making process.

Table 4: Marital Status

S.N	Marital Status	Frequency	Percentage
1.	Married	28	70
2.	Unmarried	11	27.5
3.	Widow	1	2.5
	Total	40	100

Source: Field Study 2016

The survey data from the respondents revealed that 70 % of respondents are married and 27.5% are unmarried. This shows that married women has high presentation in CREEs. This is likely because unmarried women when gets married move to their husband's place and thus married percentage is seen more.

4.1.5 Source of Income

Occupation is one of the main indicators of the economic status and has direct relationship with decision making process also. The economy of Nepal is largely dependent on agriculture. However, in the study area, the main occupation of the respondent was service, and some were engaged in teaching.

Table 5: Source of Income

S.N	Source of Income	Frequency	Percentage
1	Agriculture	6	15
2	Health Volunteer	1	2.5
3	House Wife	19	47.50
4	Service	5	12.5
5	Student	2	5
6	Teaching	7	17.5
	Total	40	100

Source: Field Study 2016

The above table shows that the highest percentage of respondents were involved in each service sector and teaching whereas 17.5% were engaged in agriculture. But 47.5% of the respondents said that they are house wives.

4.1.6 Monthly Income

Women's employment and income level plays significant role in relation of women to decision making process. Thus, data was collected to find the monthly income level of the respondents.

Table 6: Monthly Income

S.N	Monthly Income	Frequency	Percentage
1	0- 2000	3	7.5
2	2000-5000	7	17.5
3	5000-7000	10	25
4	7000-10000	9	22.5
5	10000-15000	7	17.5
6	15000- 20000	3	7.5
7	Above 20000	1	2.5
	Total	40	100

Source: Field Study 2016

Survey Data shows that the highest percentage of respondent's i.e, 22.5% respondents are earning monthly income for their support to participate in CREE.

4.1.7 Monthly Electricity Bills

Table 7: Monthly Electricity Bills

S.N	Monthly Electricity Bill	Frequency	Percentage
1	80	18	45
2	100	9	22.5
3	120	6	15
4	150	5	12.5
5	300	1	2.5
6	400	1	2.5
	Total	40	100

Source: Field Study 2016

How much a person pays as electricity use expenses is also a determining factor to know the economic status of the person. Also, awareness level is assessed through this question.

All the respondents are aware of their electricity bills at home which positive aspect is. Because, normally women are the primary users of electricity but do not know how much they pay for it. The maximum amount paid is 400 nepali rupees which is above average in Nepali rural context. Here 45 % of the women paid only minimum rate of the electricity bill

4.2 Women Participation in Policy Making Process of CREEs

4.2.1 Position of Respondents in the CREE

To increase women participation in decision making process of CREEs, there is a mandatory provision that at least 33% of women should be present in the committee.

Table 8: Position of Women in the CREEs

S.N	Position in the CREE	Frequency	Percentage
1	Member	29	72.5
2	Asst. Secretary	1	2.5
3	Chairperson	2	5
4	Secretary	1	2.5
5	Treasurer	7	17.5
	Total	40	100

Source: Field Study 2016

The seats are fulfilled by women but their representation is seen to be limited to less influential post such as Member. Among the surveyed respondents, only 5% was in the Chairperson post whereas 72.5% of the respondents were members of their organizations. However, some of the executive posts (Chairperson, Vice Chairperson, and Secretary), which play a vital role in policy making were held by men.

4.2.2 Position of Respondents in the CREE

There are policies and guidelines for women empowerment at central and local level but women themselves are not aware about these provisions and what role does it have for their empowerment.

Table 9: Awareness Level

S.N	Awareness on Mandatory Seats	Frequency	Percentage
1	Yes	21	52.5
2	No	19	47.5
	Total	40	100

Source: Field Study 2016

The data reveals that 52.5% are aware about the mandatory provision while 47.5% are not aware about this. The limited information available about mandatory seats in CREE illustrates the challenges in this area. Although all the mandatory provisions have been implemented in the CREE structure, women themselves are not aware about these mandatory seats. This is one of the reasons why respondents were only in the less influential posts.

4.2.3 Number of Years in the CREE

Years of involvement determines extent of participation and women's interest in it. The committee tenure is generally minimum of 2 years. Thus years of involvement in the CREEs were found to see the trend. The CREE electrification process started in 2065. Thus, respondents were asked their years of involvement in the CREEs ranging from 1 year to more than 11 years.

36.7% of respondents said that they have been involved in CREEs for last 3 years and 6.7% respondents said that they have been with the CREEs for more than 11 years. The maximum percentage of respondent is. ie, 36.7 % of respondents said that they have been engaged in CREE for 3 years whereas minimum percentage of respondents i.e, 3.3% said that they have been engaged in CREE for 11 years. This shows that earlier when CREE electrification just started, women were not involved in CREE's decision making process. Gradually, it started increasing and when mandatory provision was introduced, the percentage has started increasing.

Table 10: Number of Years in the CREE

S.N	Number of Years	Frequency	Percentage
1	1	3	10
2	2	2	6.7
3	3	11	36.7
4	4	2	6.7
5	5	7	6.7
6	6	7	16.6
7	8	2	6.7
8	9	2	3.3
9	More than 9	4	6.7
	Total	40	100

Source: Field Study 2016

4.2.4 Participation in Meetings

When the provisions for mandatory about women participations get start, to fulfill the mandatory provisions, male usually nominate female members and later do not think of active participation. Effort in this research has been made to find out number of meetings attended by female and also to find whether their participation is active or not through survey on frequency of suggestions made.

Table 17: Meetings Attended in a year

S.N	Meetings Attended	Frequency	Percentage
1	0	3	7.5
2	1-3	19	47.5
3	4-6	11	27.5
	More than 6	7	17.5
	Total	40	100

Source: Field Study 2016

Tables above depict effective participation of women through status of participation in meetings. This includes number of meetings attended in one year and suggestions made in the meeting. 47.5% respondents stated that they attended once to thrice in a year and 17.5 % said that they attended more than 6 times, which is quite promising. Also, only 7.5% of respondents said that they never attained in meetings, and 12.5 % of respondent said that they never put there views in the meeting. Which means their participation is meaningful and not merely for fulfilling the female quota

Table 12: Frequency of suggestions made

S.N	**Frequency of Suggestions**	**Frequency**	**Percentage**
1	Always	12	30
2	Sometimes	23	57.5
3	Never	5	12.5
	Total	40	100

Source: Field Study 2016

4.2.5 Reaction of Male counterpart in the Meeting

When women attend the meetings, male are playing very important role. And in addition, since CREE is technical sector and women feel very much dominant and do not feel confident to speak in meetings. Thus, respondents were asked about the kind of role play during meetings by male.

Table 18: Support from Male Counterparts

S.N	Reaction of Male	Frequency	Percentage
1	Supportive	31	77.5
2	Unsupportive	7	17.5
3	Very Supportive	2	5
	Total	40	100

Source: Field Study 2016

Table above depicts men's behavior in the meeting. This includes whether female members receive supportive, unsupportive or very supportive feedback, support in the meeting. 77.5% of the respondents said that the male role has been supportive in the meetings which they attend, 17.5% of the respondents said that the reaction of male counterpart in the meeting has been unsupportive.

4.2.6 Involvement in Other Organizations

Women who are involved in one organization are generally involved in some other organizations in the same vicinity.

Table 19: Involvement in Other Organizations

S.N	Involvement in Organizations	Frequency	Percentage
1	1-3	14	35
2	More than 3	26	65
	Total	40	100

Source: Field Study 2016

The table below shows that 65 % of respondents are involved in more than 3 Community based organizations. This must be reason why they stated that they skip meeting due to unavailability of time.

4.3 Encouraging factors for women participation in CREEs

4.3.1 Community Mobilization before Electrification

Community participation is a vital tool for community development and is recognized in CREE sector also. People are made aware about the process and community participation through community mobilization process and integrating social inclusion in the process. Though less, women have been involved inpolicy making process of CREE. Thus, respondents were asked if there was any community mobilization process or social inclusion activity. The table below depicts level of efforts on community mobilization before electrification.

Table 20: Community Mobilization Status

S.N	Community Mobilization before Electrification	Frequency	Percentage
1	Yes	2	5
2	No	38	95
	Total	40	100

Source: Field Study 2016

There are 3.3% respondents who said that there was community mobilization process. This means community mobilization was done but efforts were not made to involve women in the process.

Table 21: Social Inclusion Awareness

S.N	Social Inclusion before Electrification	Frequency	Percentage
1	No	30	100
	Total	30	100

Source: Field Study 2016

100% respondents said that they do not know and they did not attend any social inclusion activity. This means efforts were not made in the beginning to increase awareness or to promote women in the decision making process.

4.3.2 Capacity Building Efforts

Capacity building of community enhances ability of community and enables them to participate and make contributions in the field needed that will allow them to achieve measurable and sustainable results. There are various ways of addressing this capacity building efforts.

Tables below present capacity building efforts made in this sector. 86.6% have received trainings in terms of capacity building measures.

Table 22: Status of Trainings Received

S.N	Trainings Received	Frequency	Percentage
1	Yes	36	90
2	No	4	10
	Total	40	100

Source: Field Study 2016

The maximum percentage of respondent i.e, 60 % of respondents have received training on accounting whereas 10% have received Leadership training together with accounting training. Only 5% of respondents have received training on Leadership and Organizational Development.

Table18: Types of Trainings Received

S.N	Trainings Received	Frequency	Percentage
1	Accounting	24	60
2	Leadership	4	10
3	Leadership, Accounting	5	12.5
4	Leadership, Organizational	2	5
5	Leadership, Organizational, Accounting	2	5
6	Organizational Development	3	7.5
	Total	40	100

Source: Field Study 2016

Participating in trainings helps women to participate in meetings later, to work efficiently and enable them to make suggestions in the meetings. Thus, capacity building measures has direct relation to involve in policy making process as one of the major encouraging factors for women.

4.3.3 Reasons for skipping Meetings

There is a strong association between policy making, decision making and attendance in meetings. Decisions are made in meetings. Thus this research has surveyed on the situation of attending meetings.

Table 23: Reasons for skipping Meetings

S.N	Reasons for Skipping Meeting	Frequency	Percentage
1	Time Unavailability	24	60
2	Not Informed	1	2.5
3	Do not understand agenda	3	7.5
5	Time Unavailability Not understanding importance	6	15
6	Do not understand+domianted by male	5	12.5
7	Not informed not understand talks	1	2.5
	Total	40	100

Source: Field Study 2016

Data has been collected and analyzed for reasons of female members skipping meeting. Several reasons such as time unavailability, not understanding discussions in the meetings, not having information about date and time of the meeting has been responded by the respondents. The maximum number of respondents i.e, 60 % of them said that they did not have time to attend the meeting whereas the least percentage i.e, 2.5% of respondents said that they were not informed, the next 7.5% said that they do not understand agenda and the next 12.5% provided combined response that they are not informed together with they do not understand discussions in the meeting.

4.3.4 Involvement in Electrification

Women's involvement through active participation in project planning, design, implementation, and evaluation empowers women and gives them a stronger sense of ownership and a more pronounced stake in community development and its success. Thus data was collected at which stage of electrification stages were women involved.

Table 20: Participation Stages

S.N	Stages of Electrification	Frequency	Percentage
1.	Construction	2	5
2.	Operation and Maintenance	19	47.5
3.	Construction, Monitoring, Operation Maintenance	6	15
4.	Planning, Construction, Monitoring, Operation Maintenance	9	22.5
5.	Monitoring, Operation Maintenance	4	10
	Total	40	100

Source: Field Study 2016

The above table analyses data for role of women in different stages of electrification procedures. 47.5% said that they are involved in Operation and maintenance stage whereas just 5% of respondents were involved in construction stage. But 22.5% respondents said that they were involved since the planning stage and still involved in operation maintenance stage.

4.3.5 Benefit from Electricity

The degree of benefits from electricity is different for men and women. Benefits perceived by women have strong influence on women's ability to take advantage of these services. Hence there is a close link between women and energy, women's preferences and interests are not typically accommodated in energy policy, planning and projects.

Table 21: Importance of Electricity

S.N	How Electricity Has Helped	Frequency	Percentage
1	Freeing up time	33	82.5
2	Freeing Up time and Opportunities for Income Generating Activities	7	17.5
	Total	40	100

Source: Field Study 2016

Respondents were asked in what ways electricity has helped them82.5% of the respondents said that electricity has helped them in freeing up their time whereas 17.5% said that electricity has helped them in freeing up time and providing opportunities for income generating activities. Thus the major benefit to the women from electricity is saved time.

4.3.6 Technical Knowledge and Experience

Knowledge and experience encourages women to speak in front of mass. Women usually do not have knowledge on simple maintenance work at home and are responsible to do minor fixings. But these could be one of the major encouraging factors among many to increase women participation in CREEs. During the survey, questions were asked about responsibilities among male and female members to fix minor technical problems at home and also awareness on simple maintenance work.

Table 22: Technical Responsibility at Home

S.N	Persons fixing minor problems at home	Frequency	Percentage
1	Male	35	87.5
2	Female	5	12.5
		40	100

Source: Field Study 2016

Table 24: Awareness on Simple Maintenance

S.N	Persons fixing minor problems at home	Frequency	Percentage
1	Yes	5	12.5
2	No	35	87.5
	Total	40	100

Source: Field Study 2016

Tables above depicts technical competency among women and awareness level. 87.5 % of them said that minor problems at home are fixed by male members in the family. Also12.5 % of them stated that they do not know how to reset simple fuse. If this knowledge is limited, interest in this sector would start gradually decreasing.

4.3.7 Satisfaction Level

Satisfaction level is necessary to find out as it has close relation with further involvement and it acts as motivational factor to others in the sector.

Table 25: Satisfaction Level

S.N	Satisfaction Level	Frequency	Percentage
1	Very Satisfied	12	30
2	Not Satisfied	2	5
3	Average	26	65
	Total	40	100

Source: Field Study 2016

The table above shows only 5% of respondents are not satisfied with their participation in the CREE and 30% said that they are very satisfied.

4.3.8 Encouraging factors to Increase Women Participation in CREEs

The family size and number of children has determined the role in policy making process. Also, the highest percentage of respondents who are in this policy making position have education of +2. This qualification, socio economic status has relationship to women

participation in policy making role. And also supporting role of the family will be determined to participate the policy making process. Which is shown by table 26?

Table 26: Encouraging factors to increase women participation

S.N	Encouraging factors	Frequency	Percentage
1	Male's support during meetings	13	32.5
2	Outreach and capacity building activities	9	22.5
3	Participation at various stages of project cycle	7	17.5
4	Capacity building and participation at various stages	11	27.5
	Total	40	100

Source: Field Study 2016

Besides these, there are several other encouraging factors. The ones who receive supportive role think that this helps to increase their self-esteem and stimulate them in discussion process. Thus, male role is seen important in this arena. The 32.53% said male as being supportive in the meetings motivate females to participate in the meetings and they do not feel uncomfortable in what they are saying.

Institutional arrangement is one of the factors whereas outreach activities and capacity building activities encourages women to participate in Policy making process in CREEs.

The 17.5% of respondents stated that they are less confident in relevant skills as compared to men and there is a need for capacity building and opportunities to participate at various stages of project cycle that will encourage them to take more responsibilities in this sector.

CHAPTER–V

SUMMARY, FINDINGS AND RECOMMENDATIONS

5.1 Summary

The study on Women Participation in Policy making role in Community Rural Electricity Entities is intended to find socio economic status of women in CREEs, to assess participation of women in policy making process of CREEs and find encouraging factors for women participation. Women being primary users of electricity functions, their role in policy making process of CREEs are very important.

The variables for the research study encompasses various dimensions of social structure (caste, age group, ethnicity), socio cultural norms, education, income, motivation, training, income generation activities, participation in meetings, years of involvement in CREEs, etc. The research is exploratory and descriptive in nature. The data were based on primary and secondary sources. Extensive field survey was conducted using both questionnaire and checklist to collect primary data. Consultation of relevant literatures has been sought throughout the study. Twenty percent sampling intensity is taken and collected data have been processed, analysed and presented.

Research study shows the highest percentage of women in CREEs are of age group 35-45 years, highest percentage of women have only 2 children, Brahmin has the highest representation in the committee. Analyzing the representation status by caste and ethnic groups shows that Brahmin had the highest representation whereas Dalit and Tharu had the least representation. In the case of education, highest percentage of women have education upto grade 12. Similarly, 70 % of women are married. 47.50% of them are housewife and has no occupation and they do not consider agriculture as their occupation. The monthly income of the highest percentage of respondents is zero. In the study area, the main occupation of the respondent was service, and some were engaged in teaching profession.

Regarding women participation in policy making process in CREEs, the 33% seats which are mandatory are fulfilled by women. The higher percentage of respondents is involved with CREEs for 3 years now. Meetings attended by them quite satisfactory. However, 12.5% of respondents do not ever make suggestions in the meetings. And the major reason for skipping meetings is due to unavailability of time.

Similarly, research study showed that men has important role in promoting women in policy making process. The 32.5% respondents see male as being supportive in the meetings motivate female to participate in meetings and discuss issues confidently. 12.5% of women are less confident in relevant skills.

5.2 Findings

Socio economic status has strong association with women participation in policy making process. Particularly, family size, number of children of women and marital status has dominant role in decision making process. Occupation is one of the main indicators of the economic status and research shows it has direct relationship with policy making process and decision making process as well.

There is already some good start and women are found in policy making process in CREEs, the situation is gradually increasing with the introduction of mandatory provision. But there are some challenges. The limited information available about mandatory seats in CREE illustrates the challenges in this area. Although all the mandatory provisions have been implemented in the CREE structure, women themselves are not aware about these mandatory seats. In addition, their representation is seen to be limited to less influential post such as Member. Women who are involved in CREEs are generally involved in some other organizations in the same vicinity. This is there as on to skip meetings which are due to unavailability of time. Nevertheless, 17.6 % attending meetings more than six times a year is quite promising.

Very less community mobilization events and almost no events for promoting gender inclusion is one of the reasons why women do not understand Community Rural Electrification Program, and are not aware about mandatory seats and opportunities to participate in the trainings. But later, efforts have been made to include women in training activities. Trainings have helped women and is one of the encouraging factors which helps to build upon confidence. Women's involvement is observed in some other local organizations, self help groups but since electricity is a male dominated sector, training, exposure visits has helped them to build their confidence in this sector.

Women's involvement through active participation in project planning, design, implementation and evaluation empowers women and gives them a stronger sense of ownership. There are institutional spaces but not much effort has been made to build the

capacity of women to meaningfully participate in them. Guidelines for representation in decision making process is found missing. It is also observed that technical problems in house is generally solved by men and have stereotypical concerns about women's ability to do such things. However, it is also seen that fewer percentage of women knows how to reset the fuse in their house. This shows women have acquired some knowledge if they are provided with opportunities. Raising awareness is an important tool for increasing women participation in this sector.

Men play an important role to encourage women in this sector. Since, only 10% of policy making positions are represented by female, when opportunity for trainings come, it is male who decide whom to send and it is most of the times who have access to these opportunities. Since male plays influential role in sending participants, they may not realize that females have important role in CREEs and might not provide with these opportunities. In some CREEs men are found to support women's initiatives.

Organizations working in this area still do not have sufficient knowledge of how to present the issues related to the equal treatment of women and men and in particular, there is insufficient databases and methodologies in the sector.

5.3 Recommendations

Finally considering the participation of women in decision-making process in this sector, the barriers that limit the numbers of women reaching certain level as men or above is still evident. The federation of CREEs and respondents urges a range of actors to take measures in support of women's participation in policy -making process. These include political parties, the private sector, local NGOs, saving credit groups, academic institutions and civil society. However, governments have a lead role in encouraging and facilitating action by others, as well as in implementing measures in management of these concerns.

Recommendation is made to develop or support programmes that provide training to women candidates in the skills needed for effective policy making, and to women executives in the skills in effectively carrying out their functions and supporting equality objectives.

Quota is considered to be the effective mechanism to increase women participation and now with time change, in some of the CREEs, they are well-accepted by their male colleagues and they do not face considerable resistance in carrying out functions and exercising authority.

But most of the women come with limited experience in electricity business. There should be assurance that male members have the capacity to work effectively with their female colleagues, and that the women members have the knowledge and skills to use the relevant procedures and address local issues. However, the trend toward decentralization of responsibilities to the local level also increases the importance of addressing this challenge. There is also a need of considering other inclusion parameters, eg: caste and ethnicity.

Women are generally nominated by powerful men, with the result that they seldom influence decisions of the Committees. But with awareness and exposure, they feel confident now.

However, there should be actors who would facilitate linkages among various actors seeking to bring gender equality issues and women's views into the policy-making process; promote awareness and support for the goal of gender equality among decision-makers through public awareness campaigns; and also work in strengthening monitoring, reporting and managing knowledge about women's participation in decision-making through improved data collection, dissemination and analysis. Given that many women have had little experience with running for electricity business, it is of utmost importance that training be made readily available to allow women to develop and fine-tune their leadership skills with electricity business. Once in the policy making role, women may also benefit from leadership training and mentoring to increase efficiency and ensure sustainability.

Not only women, training programmes should also target men, to expose them to the complexities of gender discrimination and the necessity of and mechanisms for promoting women in CREEs. There are provisions of mandatory seats but these mandatory provisions must also specify details of implementation, otherwise it will be just for the sake of fulfilling the seats. The expert group agreed that the emphasis on men should be seen as a paradigm shift that allows males to focus on gender equality training for men in representative and participative arenas.

The next step is about an informative database about women in leadership position of CREEs which is urgently needed. There continues to be a need for better data to assess issues and progress. Data are lacking on many aspects of women's participation in leadership and policy-making positions in CREEs. Thus, despite the increased representation and participation of women in recent years, women's consent is not viewed as important to the policy making process in some cases. Most female representatives are rarely consulted on any

subject matter before decisions are made by local user groups, VDC level annual planning meetings, and school and health management committees. These suggest that the women's representation is merely symbolic and that women generally have to accept the decisions made by men whether they agree or not. Also, women should not only strive to achieve representation above the statutory 33%.It is also suggested to formulate the rules so as to ensure that a minimum number of women must be present at a meeting before a decision can be taken.

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Annex-1:

Women participant at policy making process in Community Rural Electrification Entities (CREEs)

Questionnaire:

General

Name:		District:	
CREE Name:		Position in the CREE:	
Contact Number:		No. of Years in the CREE:	
Marital Status:		Number of Children:	
Education Level:			

1. Source of Income/

Occupation	Agriculture/ kitchen garden (Annual)	Service	Business/ Enterprise	Wage	Foreign Employment	Other (specify)
Annual						

2. How many other organizations are you involved with other than this CREE?

…….0 ……1-3 ……more than 3

Was any community mobilization carried out formally by any organization before electrification? Yes ……..No

If Yes, did you participate? ……Yes ……No

3. Was any mobilization done for inclusion promotion?……..Yes ……No

   If Yes, did you participate? ……Yes ……No

4. Are you aware about mandatory seats in CREE? ..…..Yes ……No
5. Have you received any training? ……Yes ……No

   If Yes, List some of them. …….

6. How many meetings did you attend last year?

…..0 ……1-3 ……..4-6 ……..more than 6

7. How often do you make any suggestions/ give your opinion in those meetings?

……Always ……Sometimes ……Never

8. How do male members react when you speak in meetings?

a)Supportive b)Unsupportive c) Very supportive

9. If you have ever skipped meetings, why did you do that?
   a) Unavailability of t
   b) Was not informed
   c) Do not understand the talks in the meeting
   d) Dominated by male
   e) Others……..
10. Which stages of electrification were/are you involved in?
   a) Planning
   b) Implementation/Construction
   c) Monitoring
   d) Operation and Management
11. How has electricity helped you?
   a) Freeing up time
   b) Opportunity for income generating activities
   c) Others……
12. Who fixes the minor problems at home?

   ……Male Member ……Female Member
13. If you, do you also know how to reset a fuse? ……Yes ……No
14. How much do you pay for energy bill per month?

   …….
15. What do you suggest for raising women participation in CRE sector?.....
16. How satisfied are you with your participation in CREE?

   …….Very Satisfied……..Not Satisfied ……Average

Annex- 2: Check list for Key Informant Interview

- Status of women in Community Rural Electrification Program
- Role of women in Community Rural Electrification Entities
- Efforts made by different stakeholders in this sector
- Areas of improvement to increase women participation in this sector

Annex-3 : Check list for Focus Group Discussion

- Confidence in speaking
- Knowledge about electricity
- Knowledge about stakeholders
- Knowledge about Community Rural Electrification Program
- Daily activities
- Perception about Male counterpart
- Changes in habits due to electricity access
- Energy Calendar exercise with women only to know their involvement in other organizations, to know their daily activities

Annex 4: List of Key Informants

S.N	Name	Address
1.	Narayan Gyawali	Chairman, National Association of Electricity Users Nepal (NACEUN)
2.	Prabina Hora	Gender Expert, Alternative Energy Promotion Centre (AEPC)
3.	Teku Nepali	Member, Constituent Assembly
4.	Gyanu pandey	Focal of Gender & Social Inclusion of NACEUN
5.	Ram Prashad Adhikari	Chairperson –Maidi Gramin Vidhyur Sakari Sanstha Ltd.
6.	Ranju Pandey	Electrical Engineer, Power Trade Department of Nepal Electricity Authority (NEA)

Annex 5: List of Sample CREEs

S.No	Organization	District
1	Chhisti Samudaik Gramin Vidhutikaran Upabhokta Samuha,	Baglung
2	JaidiSamudaik Gramin Vidhutikaran Upabhokta Samuha	
3	Gramin Samaj Bikas Samudaik Vidhyut Sastha	Bake
4	Khajura Sainik Bahuudhhesiyia Saharari sanstha ltd	
5	JanajyotiVidhyut Upabhokta Samiti	Bara
6	Marshyangdi Bahu Udhesya Sahakari Sastha Limited	Chitawan
7	Swargadwari Gramin Vidhyut Sahakari Sastha	Dang
8	GadhawaVidhyut Private Ltd,	
9	Maidi Gramin Vidhyut Sahakri Sanstha Ltd	Dhading
10	Amilichhap Samudaik Bikas Samuha	
11	Durga Yuba Club	Dhanusa
12	KhimtiGraminVidhyutSanstha	Dolakha
13	GraminSamudaikAdhyan Kendra	Gorkha
14	PalukhaSamudaikSastha,	Gulmi
15	Rudrawati Samudaik Vidhyut Upabhokta Samiti,	
16	Shantipur Ilaka Gramin Samudaik Vidhyut Upabhokta Samuha,	
17	MajuwaIlaka amudaik Gramin Vidhyut Upabhokta Samuha,	
18	Baletaksar Samudaik Vidhyut Upabhokta Samiti	
19	Shree ChulachuliVidhyut Cooperative	Ilam
20	Sanakisan Sahakari Sastha	Jhapa
21	Om Birbhadra Kedar Vidhyut Sewa	Kailali
22	Pargatisil Gramin Vidhyutikaran Sahakari Sastha	Kanchanpur
23	Timal Samudaik Vidthut Sahakari Sanstaha Ltd	Kavre
24	Digo Bikash Ka Lagi Samuhik Aviyan – Madan Kudari	
25	Birta Deurali Samudayik Vidhyutikaran Sahakari Sanstha Ltd	
26	South Lalitpur Rural Electric Cooperative LTD (SLREC)	Lalitpur
27	Paschim Lamjung Samudaik Vidhyut	Lamju
28	Panchadhura Samudaik Vidhyutikaran Upabhokta Samuha	Mahottari
29	AangdinSewa Company	Morang
30	Bhuwan Pokhari Samudaik Bitarak Sanstha,	Palpa
31	KachalSamudaik Vidhyut Upabhokta Samiti	

32 33	Bachha Samudaik Vidhyut Up Samii Ranipani Samudaik Gramin Vidhyutikaran Upabhokta Samiti,	 Parbat
34 35	Alau Vidhyut Upabhokta Samiti, DeuraliVidhyutUpabhoktaSamiti	Parsa
36	KisanJagaran Vidhyut Upabhokta Samiti	Ramechap
37	Pragtingar Bikash Samuha	Rupandehi
38	Sankhamul Gr. Vidhutikaran Samudaik Sastha	Salyan
39	Rajghat Samudaik Vidhyut	Sarlahi
40	Shree Gramin VidhyutSewa Kendra	Sunsari
41 42	Samudaik Gramin Urja Bikas Samiti, Samudayik SewaJilla Samanwaya Samiti	Syangja
43 44	Gramin Purbadhartatha Batabaran Bikas Manch, SisaGhat Bazaar BikasSamiti	Tanahu
45	Samudaik Bal Bikash ThathaMahilaJ agaran Samuha	Udaypur