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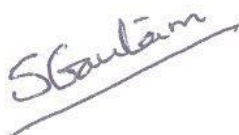


**RENEWABLE ENERGY FOR  
RURAL LIVELIHOOD PROGRAMME  
(RERL)**



## PROJECT PROFILE

About the Project	Geographic coverage of the project	
Project Title: Renewable Energy for Rural Livelihood	National level coverage (Yes/No): Yes	
Award ID: 76958	Number of Regions covered: NA	
	Number of Districts Covered: NA	
	Number of Municipalities Covered: NA	
Web link: <a href="http://www.aepc.gov.np">www.aepc.gov.np</a>	Number of VDCs Covered: NA	
Strategic Results		
UNDP Strategic Plan Outcome: Growth & development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded		
UNDP Strategic Plan Output:Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)		
UNDAF Outcome: Vulnerable groups have improved access to economic opportunities and adequate social protection		
UNDAF/CPAP Output 2.4:Vulnerable groups have increased access to sustainable productive assets and environmental services		
UNDP Output 2.4.1. AEPC's capacity enhanced for scaling up energy services in the rural areas		
Project Duration (day/month/year)	Implementing Partner(s)	Implementation Modality
Start Date: 21 July 2014	1. Ministry of Population and Environment, Government of Nepal 2. Alternative Energy Promotion Centre (AEPC)	National Implementation Modality (NIM)
End Date: 30 June 2019		
Project Budget (US\$)		
UNDP Contribution: 2,000,000		
Government Contribution: 30,312,500		
Other Contributions: 24,249,600		
Donor Contributions:		
Donor 1: 3,000,000 (GEF)		
Donor 2:378,000 (Norwegian)		
Donor 3: 99,269 (Korean)		
Unfunded: USD 244,930		
Total Project Budget:	NPR 3,813,750,000 (US\$ 35,312,500)	
Total Project Expenditure till 2016:	NPR 335,287,728 (US\$ 3,104,516)	
Budget 2016:	NPR 195,289,488 (US\$ 1,808,236)	
Expenditure 2016 (Indicative only):	NPR 183,602,160 (US\$ 1,700,020)	
Budget Utilization % (2016)	94%	



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Project Manager  
Date: 5/7/2017



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Date: 5/7/2017

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## ABBREVIATION

AEPC	:	Alternative Energy Promotion Centre
BFI	:	Banking and Financial Institutions
BoA	:	Business Opportunities Assessment
CAA	:	Country Action Agenda
CREF	:	Central Renewable Energy Fund
CoP	:	Conference of Parties
DDC	:	District Development Committee
DEECCS	:	District Energy Environment Climate Change Section
DEMP	:	District Electrification Master Plan
DFS	:	Detailed Feasibility Study
NRREP	:	National Renewable Rural Energy Programme
SHS	:	Solar Home System
SPV	:	Special Purpose Vehicle
PPP	:	Public Private Partnership
UNDP	:	United Nations Development Programme
GEF	:	Global Environmental Facility
GESI	:	Gender and Social Inclusion
GIS	:	Geographic Information System
ICS	:	Improved Cooking Stoves
IGA	:	Income Generating Activities
ISPV	:	Institutional Solar Photo Voltaic
IP	:	Investment Prospectus
kW	:	Kilowatt
MHP	:	Micro Hydro Power
MSME	:	Micro, Small & Medium Enterprises
MQAU	:	Monitoring and Quality Assurance Unit
NEA	:	National Electricity Authority
NPC	:	National Planning Commission
PEUC	:	Productive Energy Use Component
PPA	:	Power Purchase Agreement
POV	:	Power Output Verification
PV	:	Photo Voltaic
RERL	:	Renewable Energy for Rural Livelihood
RET	:	Renewable Energy Technology
SASEC	:	South Asia Sustainable Economic Cooperation
SDG	:	Sustainable Development Goal
SEforALL	:	Sustainable Energy for ALL
SPV	:	Special Purpose Vehicle
UNCDF	:	United Nations Country Development Framework
UNESCAP	:	United Nations Economic and Social Commission for Asia and the Pacific
VDC	:	Village Development Committee
WB	:	The World Bank

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## 1. EXECUTIVE SUMMARY

Renewable Energy for Rural Livelihood (RERL) is supporting AEPC to remove barriers for scaling up less disseminated larger renewable energy systems such as mini hydro, large micro hydro and large solar PV. RERL provides incremental support to AEPC by providing technical assistance for developing conducive policy environment, demonstration of financially attractive projects, implementation of sustainable modalities and capacity development. The UNDP-GEF Renewable Energy for Rural Livelihood (RERL) was designed as an integral part of the National Rural Renewable Energy Programme (NRREP), which is an umbrella programme of Government of Nepal (GoN) being implemented by Alternative Energy Promotion Centre (AEPC). RERL aims to address some of the gaps and needs in the NRREP which are relevant to promoting mini-hydro and Large-scale solar PV projects

RERL supported AEPC to draft Renewable Energy Subsidy Policy and Delivery Mechanism, which was promulgated in 2016. The new policy opens up space for private sector investment in RE projects. Further, this policy creates an opportunity for subsidizing services instead of only equipment, which is expected to lead towards greater efficiency and sustainability. RERL has been working with District Development Committee (DDC) to prepare integrated District Electrification Master Plan (DEMP) and Nepal Electricity Authority to develop and implement technical standards for grid connection of MHP and Solar PV.

In 2016, RERL supported both relief and rehabilitation as well as regular activities of AEPC. As a result, a total of 253,320 people from 53,898 households benefited from different energy services. Out of which, 17,688 HHS' directly benefited from access to electricity from solar PV or Micro Hydropower Plants and others from reinstated power systems for health and education services after the earth quakes of 2015.

RERL supported Central Renewable Energy Fund (CREF) to establish innovative financing mechanism such as soft credit, credit guarantee and credit insurance to reduce the risks of the Banking and Financial Institutions (BFIs) to invest in RE projects. RERL has initiated vendor financing mechanism to develop small scale solar pumping for irrigation through CREF. In 2016, RERL provided financial assistance to install 36 small scale solar irrigation projects in Chitwan and established credit guarantee mechanism for financial closure of the 200kW Simrutu Khola Mini Hydropower Project, Rukum. RERL is also working with UNCDF to prepare an elaborate Vendor Financing Manual to encourage private sector investment in developing and managing RE projects.

In 2016, RERL completed different studies such as transmission line assessment, environment assessment, detail feasibility and prefeasibility of 7 mini hydro projects. RERL the communities of Taplejung ditrict to erect 37 km 11 kV transmission line under the AEPC's Kabeli Transmission Project funded by the World Bank.

RERL supported the entrepreneurs from Dubung, Badi, Tanahun to conduct business opportunity assessment and prepare detailed business plans of micro enterprises to be operated by the 18kWp Baidi Solar Micro Grid, established with financial support of UNESCAP and AEPC. In addition, RERL is working with UNESCAP under the 5P Project to promote solar PV based multiple water uses systems in Raksirang, Makawanpur. Likewise, RERL also carried out DFS of 6 potential Solar Irrigation Projects in Western Nepal. Under the Dhading Solar Project funded by Gyeongsangbuk-do Provincial Government of Republic of Korea, RERL supported to install clean energy services through 3 mini grids, 1 water lifting system and 1 micro industrial hub for 48 households of extremely marginalized Chepang community. RERL and South Asia Sustainable Economic Cooperation (SASEC) of Asian Development Bank (ADB) and AEPC are jointly working to support development of solar PV mini grids in different parts of the country. In this regards, RERL provided technical assistance for 8kW project in Surkhet and 30 kW project in Achham.



RERL is assisting AEPC for commercial operation of MHP in different parts of the country. In Dolakha and Baglung district, RERL is assisting communities to form cooperative to operate and manage their rehabilitated MHPs. Likewise, selected MHPs in Achham districts are also being supported for commercial operation. The innovative idea is to orient the communities to take their MHP as a profit making asset and to improve revenue generation. For increasing the revenue of the MHPs, RERL is closely working with the Productive Energy Use Component of AEPC to promote micro and small enterprises utilizing available electricity. In 2016, 443 enterprises were established with AEPC subsidy, 318 of which received direct technical support from RERL. To ensure that women and men from marginalized groups benefit from access to electricity, AEPC provides additional subsidy to establish enterprises. RERL provided training on business management and skills development to 48 women entrepreneurs in 2016.

RERL supported AEPC to develop and pilot Sustainability Framework for micro hydro. The framework looks at more than 40 sustainability indicators covering technical status, revenue generation, human resources, environmental condition and social inclusion. The framework will be institutionalized in AEPC's monitoring system and will provide easy access to information for decision making on what kind of post installation support each project needs and prioritizing the support.

RERL supported AEPC to revise the Power Output Verification Guidelines for Micro Hydro in 2015, which now include power plants above 100 kW as well. In 2016, RERL organized training for POV Inspectors based on the revised guidelines; 25 engineers including 1 woman were trained.

RERL and AEPC worked with the World Bank for Capacity Need Assessment in the renewable energy sector. The assessment identified training needs of governmental agencies, non governmental organizations and the private sector at central and local levels. In 2016, RERL provided training on Large Solar PV for Grid Connection to 26 engineers including 2 women.

In 2016, SEfor ALL provided assistance to National Planning Commission to prepare Country Action Agenda and shared with the three thematic coordination groups; i) energy access, ii) energy efficiency and, iii) renewable energy.

### **Five key results achieved in 2016**

- 1. Renewable Energy Subsidy Policy and Renewable Energy Subsidy Delivery Mechanism approved by Government of Nepal**
- 2. District Electrification Master Plan of Gorkha District**
- 3. MoU between AEPC and NEA for joint development of 10 Mini Hydropower Projects**
- 4. EQ Relief & Rehabilitation: Financial and Technical support to 63 MHPs benefiting 15,339HHs, Solar PV 88,559HHs**
- 5. 443 Renewable Energy Powered Productive End Uses established**
- 6. Finalization of Country Action Agenda for SEforALL.**

## BACKGROUND AND RATIONALE

Over 75% of the population of Nepal has access to electricity. However, in rural areas, only 60% have access to electricity. Most of the households in the country receive electricity from the national grid and about 15% from off-grid renewable energy sources such as Pico Hydro (<10kW), Micro Hydro (10 to 100kW) and Solar Home System (SHS). Though there is a huge potential for Mini Hydro(> 100kW), very few projects have been developed in the country in recent years due to technical and operational challenges. In areas without sufficient hydro resources, larger solar PV systems would provide much more potential for economic growth compared to SHS.

NRREP, the base line programme of GEF UNDP RERL, has a five years target of 25 MW additional capacities of Micro Hydro and Mini Hydro. The RERL's efforts will facilitate this target being reached through promotion of larger systems. The target of RERL 10 MW from mini/micro hydro has thus been aligned with NRREP to work in this sector. However, NRREP has not indicated any specific targets for institutional Solar Photo Voltaic (ISPV) and Solar pumping (PVPS). RERL supports AEPC/NRREP in the areas of Mini Hydro, Mini Grid, Solar PV, productive energy uses and Public Private Partnership (PPP) implementation modality.

## 2. PROJECT SUMMARY AND OBJECTIVES

The Renewable Energy for Rural Livelihood (RERL) is funded by Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP). RERL is developed as an integral part of Alternative Energy Promotion Centre (AEPC)'s National Rural and Renewable Energy Programme (NRREP) and thus, assists in fulfilling its ambitious targets. AEPC and donors have adopted a single programme framework. Thus, the NRREP represents the collective baseline activities in the country on renewable energy. The specific Renewable Energy (RE) related components of that programme, particularly on Mini/Micro Hydro and large solar PV systems are included in the GEF-UNDP RERL project baseline activities.

The main objective of RERL is to support AEPC to remove barriers for scaling up promotion of less disseminated larger renewable energy systems such as mini hydro, large micro hydro and large solar PV systems. RERL intends to provide incremental support to NRREP by providing technical assistance for developing sustainable implementation modalities. The core strategies of RERL include demonstration projects, private sector involvement for financing and attainment of financial sustainability through promotion of productive energy use.

## 3. PROGRAMMATIC REVISIONS -NA



#### 4. NARRATIVE ON KEY RESULTS ACHIEVED IN 2016

##### Theory of Change

Nepal has made a significant achievement in development of isolated micro hydro (less than 100 kW with average capacity of 30 kW) and solar home systems. About 15% of the country's population gets electricity from these two sources. On the other hand, Nepal has also developed larger hydropower projects (>1000 kW) to feed into the national grid but there are very limited intermediate renewable energy systems with the capacity in between in the country. RERL was launched by GoN, GEF and UNDP to remove the barriers in policy, financing, sustainability and capacity to promote less disseminated technologies such as mini hydro (>100<1000 kW), large micro hydro (>60-100kW), large solar PV (mini grid, institutional and pumping) and mini grids interconnecting several micro hydropower plants.

RERL is working with AEPC to formulate policies for renewable energy promotion in the country, with DDCs to prepare integrated electrification plans and Nepal Electricity Authority to develop and implement technical standards for grid connection of MHP and Solar PV. It is expected that removing barriers in policy and institutional arrangements will help promote mini hydro and large solar PV systems by attracting private investment. Furthermore, RERL has prepared guidelines and modalities to involve private companies in mini hydro development through Public Private Partnership arrangement by forming Special Purpose Vehicle. RERL and SEforALL are working together to strengthen capacity of NPC for realization of SEforALL objectives.

To demonstrate financial attractiveness and technical viability of larger RE systems, RERL is working with AEPC/NRREP to promote demonstration projects. RERL has carried out detailed feasibility studies of mini hydro, mini grid, large micro hydro and large solar PV systems in different parts of the country. In case of mini hydro, RERL has been working with local communities to form SPV and with banks to flow credit to these projects. Once demonstration projects are completed, it is expected that the private sector will see the benefits in investing in renewable energy in rural areas and will be willing to develop projects that will benefit rural population with access to modern energy services. To arrive at increased access to modern energy systems, RERL is supporting AEPC to remove barriers, which are discussed below.

RERL is working with CREF to develop innovative financing mechanism such as soft credit, credit guarantee and credit insurance to reduce the risks of the BFIs to invest in RE projects. RERL has already initiated vendor financing mechanism to develop small scale solar pumping for irrigation through CREF. One of the major reasons for lack of private investment in RE sector is low return. To enhance revenue generation from RE projects, RERL is closely working with AEPC to develop mechanisms for promotion of productive energy uses. Moreover, RERL is also supporting women and marginalized communities to benefit from electricity by establishing enterprises and income generating activities.

RERL is working at different levels with various stakeholders to enhance capacities to develop and manage RE systems. From design and installation to operation and management of systems are covered. Besides, RERL is also supporting to develop capacity of AEPC and other governmental organization to promote sustainable RE systems.

With the aim to support the Government of Nepal (GoN) to remove barriers for up-scaling promotion of lesser disseminated renewable energy technologies such as larger micro hydro (+60 kW), mini hydro and large solar photo-voltaic (PV) systems to improve livelihood and conserve the environment; RERL project has been instrumental in providing the needed technical assistance to AEPC in rehabilitation work, policy support, demonstration of new pilots/solutions, productive energy use promotion and capacity enhancement. RE Subsidy Policy and Delivery Mechanism approved by GoN.

Given the context, to support government's efforts on relief and rehabilitation; during this reporting year RERL has installed 111 large solar PV systems in 100 institutions. RERL supported rehabilitation of 26 MHPs with the total installed capacity of 662 kW.

RERL has been working with AEPC to formulate policies for renewable energy promotion in the country, with DDCs to prepare integrated electrification plans and Nepal Electricity Authority to develop and implement technical standards for grid connection of MHP and Solar PV. RE Subsidy Delivery Mechanism has been drafted and submitted to AEPC and Joint meeting between AEPC and NEA has been held and working on net metering standard. It is expected that removing barriers in policy and institutional arrangements will help promote mini hydro and large solar PV systems by attracting private investment. Furthermore, RERL has prepared guidelines and modalities to involve private companies in mini hydro development through Public Private Partnership modality by forming Special Purpose Vehicle (SPV).

To demonstrate financial attractiveness and technical viability of larger RE systems, RERL is working with AEPC/NRREP to promote demonstration projects. RERL is currently working with CREF to establish innovative financing mechanism such as soft credit, credit guarantee and credit insurance to reduce the risks of the BFLs to invest in RE projects. RERL has already initiated vendor financing mechanism to develop small scale solar pumping for irrigation through CREF. Moreover, RERL is also supporting women and marginalized communities to benefit from electricity by establishing enterprises and income generating activities. Until now RERL has provided direct assistance to establish 318 productive use enterprises. 1107 people are employed by the 443 enterprises of which 286 are male owned, 29 female owned and 3 community owned. Besides, RERL also supported 3,151 income generating activities (IGA) benefiting 14,809 people.

Activities under Sustainable Energy for All (SEforALL), a joint initiative of UNDP and the Norwegian Embassy, are implemented by RERL. It contributes to the same UNDAF and CPAP outcomes. SEforALL provides technical assistance to National Planning Commission (NPC) which is the national focal agency.

**Following table shows the linkage of outcome and output statements of the project:**

**Table 1: Outcome and Output Statements**

<b>Outcome Statement</b>	<b>Output Statement</b>
<b>UNDAF/CPAP Outcome 2: Vulnerable groups have improved access to economic opportunities and adequate social protection</b>	<b>UNDAF/CPAP Output 2.4: Vulnerable groups have increased access to sustainable productive assets and environmental services</b>  <b>UNDP Output 2.4.1. AEPC's capacity enhanced for scaling up energy services in the rural areas</b>
<b>Project Outcome 1: Strengthened legal, institutional and policy environment to support RE and other low - carbon technology development and utilization</b>	Output 1.1: Approved and enforced policy that enables PPP model for mini hydro and large scale solar PV development, including fiscal incentives and sustainability for possible changes in Nepal government structure
	Output 1.2: Methodology and database developed and made available for incorporating mini hydro and large scale solar PV systems into district RE plans
	Output 1.3: Completed training and awareness programme for relevant government agencies and stakeholders on mini hydro and large scale solar PV systems development and productive end use

<b>Project Outcome 2: Increased investment in RE</b>	Output 2a.1: Commissioned mini hydro demonstration projects totaling 1 MW through PPP model
	Output 2a.2: Commissioned mini grid demonstration projects totaling 300 kW
	Output 2a.3: Commissioned large scale solar PV demonstration projects totaling 500 kW
	Output 2b.1: Demonstrated PPP models facilitating cooperation between private sector public sector, and local organizations through establishment of Special Purpose Vehicles (SPV) in three selected mini hydro project (1MW)
	Output 2b.2: Demonstration financially sustainable and reliable mini grid connecting 10 micro hydro system (300 kW)
	Output 2b.3: Demonstration financially sustainable and reliable large scale solar PV system (300 kW)
	Output 2b.4: Operationalized 2 MW of off- grid large micro hydro (over 60 kW) power projects demonstrating cost advantage feasibility, productive end use, and best practice through technical assistance
	Output 2b.5: Completed financial closure of 7 MW of off-grid mini-hydro power projects replicating PPP model through establishment of SPVs, demonstrating cost-advantage, feasibility, productive end-uses, and best practice through technical assistance
	Output 2b.6: Completed financial closure of 2 MW of large scale solar PV systems, demonstrating cost advantage over smaller PV systems, feasibility, productive end-uses, and best practice through technical assistance
<b>Project Outcome 3a: Improved availability of financial investment supports for rural RE and other low-carbon technology applications</b>	Output 3a.1: Established a wholesale financing instrument to incentivize Banking and Financial Institutions (BFIs) for financing domestic manufacturers to meet growing orders and be cost competitive
	Output 3a.2: Established a wholesale financing instrument to incentivize Banking and Financial Institutions (BFIs) to promote commercial financing for mini-hydro and large-scale solar PV projects
<b>Project Outcome 3b: Improved design and packaging of investment support mechanisms for rural RE and other low-carbon technology applications</b>	Output 3b.1: Designed and provided technical support for financing platforms and services for promoting commercial financing for domestic manufacturers
	Output 3b.2: Designed and provided technical support for financing platforms and services for promoting commercial financing for mini-hydro and large-scale solar PV projects
	Output 3b.3: Developed training materials on mini-hydro and large-scale solar PV projects for financing institutions
	Output 3b.4: Created matchmaking platform for mini-hydro and large-scale solar PV developers, financing institutions, and equity investors, and productive end users
	Output 3b.5: Functional enterprises adopting productive use of electricity

	Output 3b.6: Operationalized mechanism to promote financial products for entrepreneurs/end users
	Output 3b.7: Ensured women and marginalized/vulnerable groups own 33% of the functional electricity based enterprises established
<b>Project Outcome 4: Enhanced capacities and skill of various stakeholders in the RE sector</b>	Output 4.1: Established database of technical specifications for the design, manufacture for micro hydro (60+ kW) and mini hydro , installation and after sales service in micro hydro (60+ kW) and large scale solar PV systems
	Output 4.2: Fully trained skilled and technically capable people available for project identification, feasibility studies and detail design of mini hydro projects
	Output 4.3: Fully trained skilled and technically capable mini hydro manufacturers in identified areas and their after sales services
	Output 4.4: Fully trained skilled and technically capable construction and installation teams within companies to improve quality of installed mini hydro projects and large solar PV system
	Output 4.5: Fully trained skilled and technically capable people available for operation, maintenance and business management of mini hydro projects and large scale solar PV systems
<b>Project Outcome 5*: Enhancing capacity of Government of Nepal to lead and coordinate the Implementation of SEforALL initiatives</b>	Output 5.1: Preparation of SEforALL Country Action Agenda and Investment Prospectus.
	Output 5.2: Institutionalization of SEforALL Nepal Secretariat.
	Output 5.3: Capacity Building of NPC for Implementing SEforALL.
	Output 5.4: Support, documentation and outreach services.

## 5.1 Progress towards the UNDAF/CPAP Outcomes

Table 2: Progress on Outcome Indicators

Outcome statement	Outcome indicator	Baseline	Cumulative Target for 2013 - 2017	Total target achieved till 2015	Milestone for 2016, if any	Achievement 2016	Year for the latest data	Source of data
<b>Outcome 1:</b> Strengthened legal, institutional, policy, planning, and information environment ensures increased RE investment and utilization	No. District Energy Plan	NA	15 DEMP prepare	DEMP Methodology prepared & DEMP of Gorkha completed	Prepare DEMP for 7 DDC	DEMP is prepared in consultation and agreement with Nepal Electricity Authority. The discussion is ongoing and the plan has been pushed to 2017 and 2018.	2016	DEMP Report
	No. of policies and legal frameworks	Rural Energy Policy 2006	RE Policy, GESI sensitive subsidy policy, subsidy delivery mechanism and draft RE Act submitted to GoN	RE Subsidy Policy drafted and submitted to AEPC	NA	RE Subsidy Policy approved by GoN, RE Subsidy Delivery Mechanism drafted and submitted to AEPC	2016	Subsidy Policy
<b>Outcome 2:</b> Increased Investment in RE	RE Demonstration projects, MW	NA	Produce 1.8 MW from demonstration (mini hydro LSPV, mini grid)  Financial closure of RE project (demo & post demo), MW	1 MW from micro hydro, .04 MW from solar PV. Total installed capacity 1.04 MW	3 MW from Micro Hydro and solar PV	Total 3.25 MW electricity generated (2.4 MW from new Micro Hydro+ 0.66 MW from rehabilitated MHP + 0.19 MW	2016	MIS

						from solar PV)		
<b>Outcome 3:</b> Improved availability of financial investment support for rural RE and other low-carbon technology applications	No. of RE financial instruments	NA	4 financial instrument	3 financial instrument completed	1 financial instrument	Ongoing	2016	CREF
	No. of productive energy use enterprises	NA	300 productive energy use enterprises	657 energy based enterprises established	NA	NA	2015	PEUC
<b>Outcome 4:</b> Enhanced technical capacities and skills of various stakeholders in the design, manufacture, installation, and operation, management of rural RE projects planning, assessment and monitoring	No. of people trained on survey and design	NA	100 people trained on survey and design	50 people trained on survey and design	25 people trained in survey and design	25 people have been trained on Large Scale Solar PV (LSSPV)	2016	MIS, Training Report
	No. of people trained for installation	NA	100 people trained for installation	NA	50 people trained for installation	25 people have been trained on Power Output Verification (POV) Inspector	2016	Training Report/MIS
	No. of people trained for operation	NA	100 people trained for operation	25 operators have been trained	75 people trained for operation	Planned for 2017	2015	Training Report
<b>Outcome 5</b> Enhancing capacity of Government of Nepal to lead and coordinate the Implementation of	SEforALL Country Action Agenda Approved by the government.	Nepal has opted into the SEforALL initiative, NPC has been designated as the leading agency and technical support to	SEforALL Country Action Agenda Approved by the government.	NA	Approved by High Level Mechanism and its launching.	Country Action Agenda is finalized with consultation, its edit and layout design is completed	2016	SEforALL Technical Team



SEforALL initiatives		be provided for NPC to realize this initiatives.						
	SEforALL Investment Prospectus prepared.	NA	SEforALL Investment Prospectus prepared.	NA	Consultant selection process initiated.	TOR for selection of consultant to prepare IP is drafted	2016	
	Institution alization of SEforALL Nepal Secretariat.	NA	SEforALL Secretariat Operational	NA	Support to NPC on studies, workshops, seminars and SEforALL coordination group meetings organized.	Three thematic workshop organized, supported FEAM Nepal to leverage the forum to disseminate SEforALL agenda.	2016	
	Capacity Building of NPC for Implementing SEforALL.	NA	Training program conducted for NPA and other government officials. Participation and seminars/ workshop knowledge sharing visits.	NA	Training Program Conducted and participation in knowledge sharing visits.	A comprehensive orientation training program on SEforALL organized for NPC and government officials. 14 People participated in the program. Provided support to AEPC ED and NPD of the program to participate in SEforALL related side event on COP22 in Marrakesh, Morocco.	2016	

	Support, documentation and outreach services.	NA	Publish information material, enhance outreach for civil society and private sector at provincial and national level.	NA	At least 2 provincial civil society orientation conducted.  Reprint RAGA report	Published SEforALL brochure in Nepali and English Language, Prepared TOR and selection of consultants for civil society and private sector orientations. Civil Society orientation on SEforALL initiatives organized in Pokhara. RAGA report reprinted.		
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### **Progress towards Outcome 1:** Strengthened legal, institutional and policy environment to support RE and other low – carbon technology development and utilization

**Outcome 1:** This outcome focuses on formulation of policies, institutional arrangement and capacity development of governmental agencies to create conducive policy environment for private investment in renewable energy projects. The project has supported AEPC in drafting the RE Policy which has been shared with stakeholders. In 2016, RERL provided extensive support to AEPC to draft RE Subsidy Policy 2016 and RE Subsidy Delivery Mechanism, both these important documents have been approved by the Government of Nepal. The new subsidy policy provisions grant support to the private sector as well for development of off grid renewable energy projects. It further has for the first time in Nepal provisioned subsidy for not only equipment and construction but also for energy services based on kilowatt hour.

RERL is working with government agencies, including AEPC to help build their capacity in relation to development of mini hydro and larger solar PV systems. RERL supported DDC Gorkha to prepare District Energy Master Plan. The methodology for preparing the Master Plan will be used in other districts too. In December 2016, RERL provided orientation to 18 DDCs on the methodology for preparing DEMP.

### **Progress on Output 1.1:** Approved and enforced policy that enables PPP model for mini hydro and large scale solar PV development, including fiscal incentives and sustainability for possible changes in Nepal government structure

RERL has supported AEPC to prepare **RE Subsidy Policy and RE Subsidy Delivery Mechanism** that has been approved by Government of Nepal (GoN) in 2016. The new subsidy policy provisions grant support to the private sector as well for development of off grid renewable energy projects. It further has for the first time in Nepal provisioned subsidy for not only equipment and construction but also for energy services based on kilowatt hour.

The energy crisis of 2015/16 led to a lot of soul searching in Nepal. One of the positive outcome has been the renewed interest in indigenous renewable energy resources. RERL supported AEPC to organize **“Renewable Energy Exhibition 2016”** with slogan of **“Renewable Energy for Energy Security”** in Kathmandu from January 1 to 3, 2016 with the objective of creating awareness about renewable energy among the general public as an effective alternative to address energy crisis faced by the country. The programme also included a Policy Discussion on ‘renewable energy for enhancing energy security’.

The Government of Nepal is looking at the feasibility of interconnecting large solar PV and Wind energy plants with the national grid to reduce power outages in the Integrated Nepal Power System and also to reduce dependence on imported fossil fuel for electricity generation. A Task Force under the chairmanship of the Energy Secretary has been constituted to look at the possibilities of grid connection of RE and provide recommendations to the government. RERL and AEPC actively supported in preparing the recommendations for **Policy for Grid Connection of Renewable Energy Technologies**. The Task Force has recommended to inject 15% of the total connected power from renewable resources along with limits of power injection at various voltage levels. Once these recommendations are adopted in the policy, Nepal Electricity Authority (NEA), the national electricity utility, will go for Power Purchase Agreement (PPA) for renewable resources at higher rate than conventional sources. In this regard, RERL provided assistance to NEA to prepare technical specifications and bid document for procurement of **64 MW grid-connected Solar PV** to be installed at different sub stations around the country.

AEPC/RERL organized a half day workshop on **Grid Connection of Renewable Energy Technologies** on 4 March 2016. The main purpose of the workshop was to bring together representatives from government, utility and academic institutions and practitioners to finalize the draft technical specifications for interconnection of solar PV prepared by RERL/AEPC, revision of existing Technical Standard for Grid Connection of Micro/Mini Hydro, experience sharing from the region and discussion on technical report prepared by Ministry of Energy for grid connection of solar PV, feed-in tariff and net metering. Altogether 53 participants from different organizations actively contributed in the workshop. RERL also provided orientation to engineers from Department of Electricity Development (DoED) on large solar PV for grid connection.

As envisaged by the Constitution of Nepal 2015, Nepal will be a federal republic with central, provincial and local governments. RERL supported AEPC in 2016 to prepare a broad concept to decentralize renewable energy promotion activities from central level to provincial, district and village/municipalities levels. The study on **Institutional Arrangement in the Federal Structure** has been completed as directed by the Government to ministries, departments and agencies to prepare plans to decentralize their activities.

**Progress on Output 1.2:** Methodology and database developed and made available for incorporating mini hydro and large scale solar PV systems into district RE plans

RERL supported District Development Committee (DDC) Gorkha in 2015 to prepare District Electrification Master Plan (DEMP). The draft DEMP of Gorkha was completed in January 2016. The methodology developed for preparing the Master Plan will be used in other districts too. The DEMP looks at electrification status of all villages in the district and identifies the least cost alternative among the grid extension, mini/micro hydro and solar PV.

In December 2016, RERL provided orientation to 18 DDCs on the methodology for preparing DEMP. It is expected that these districts will also initiate DEMP preparation along with their 14 Steps Planning process supported by UNDP's Local Governance and Community Development Programme.

**Progress on Output 1.3:** Completed training and awareness programmes for relevant government agencies and stakeholders on mini hydro and large scale solar PV systems development and productive end use

With the financial assistance of United Nations Environment Programme (UNEP), RERL/AEPC and Practical Action Consultancy jointly carried out **Case Studies of Mini Hydropower Projects in Nepal**. The study identifies issues related to governance, management, financing, operation, etc. of 5 mini hydropower projects across Nepal. The study shows that alignment of incentives for governance and management are very important for sustainability, reliability and quality services. In 2015, RERL/AEPC had conducted similar study looking at large solar PV systems in Nepal.

RERL engineers provided a week-long training on **Large Solar PV Systems** to 26 engineers, including 2 women, from Department of Electricity Development, Ministry of Energy. The training focused on different aspects of developing large scale solar PV systems for grid interconnection. RERL prepared the training course material and provided the training from 28 June to 3 July 2016. After completion of the training, DoED Director General acknowledged the effort of RERL/AEPC towards grid connection of renewable energy systems and requested for technical support for finalizing standards and specifications for grid connection of large Solar PV systems.

**Progress towards Outcome 2:** Increased investment in RE

**Outcome 2:** This outcome deals with increased investment in Renewable Energy Projects by provision of financing mechanisms and demonstration of technically sound and financially viable mini hydro, mini grid, large solar PV and large micro hydro projects. RERL is working with Central Renewable Energy Fund (CREF) of AEPC to establish financing mechanism to attract private investment in renewable energy projects. CREF support will initially go to demonstration projects promoted by RERL/AEPC. A soft credit and credit guarantee mechanism for financing mini hydro demonstration projects and vendor financing mechanism for small solar PV pumping for irrigation have been established and are operational. It is expected that more fund will be available through these mechanisms to upscale RE in Nepal in future. RERL provided financial assistance of USD 400,000 to CREF in 2016 to operationalize the mechanisms. CREF has provided financial assistance to install 36 small scale solar irrigation projects in Chitwan district and financial closure of the 200 kW Simrutu Khola Mini Hydropower Project.

Most of the budget allocated for supporting demonstration projects was reallocated to support government's relief and rehabilitation efforts after the earthquakes in 2015. RERL provided technical and financial assistance to install 111 Institutional Solar PV systems in government buildings, health posts, schools benefitting 396,996 people. Similarly, with RERL's financial and technical assistance rural communities brought back 26 MHPs to operation generating 662 kW and benefitting 6,617 households that had ceased to get electricity after their plants were damaged by the earthquakes. RERL also provided assistance to AEPC to carry out detailed feasibility study for rehabilitation of 45 MHP damaged by the earthquakes.

**Progress on Output 2a:** Commissioned 1MW mini hydro, 300 kW mini grid and 500 kW large scale solar PV demonstration projects through PPP model

**Output 2a** provisions activities to establish different financial mechanisms to attract private investment in renewable energy projects. In this regard, RERL is supporting CREF to establish and operationalize financial instruments such as soft credit, credit guarantee and vendor financing for renewable energy projects. USD 400,000 was provided to CREF in 2016 to support mini hydro and solar irrigation projects.

RERL and SASEC of AEPC have identified 7 mini hydropower projects for development. These projects include Phawa Khola (360 kW), Namche (300 kW), Manjo (512 kW), Bom Khola II (186 kW), Simrudhu (200 kW), Sani Bheri (200 kW) and Giri Khola (200 kW). AEPC, RERL, SASEC and Asian Development Bank decided to take these projects forward. RERL will provide technical assistance necessary for financial closure whereas SASEC will provide financial assistance (both loan and subsidy) to develop these projects.

RERL is also supporting the communities of Junbesi Mini Hydropower Project (300 kW) to carry out Business Plan of the project. This project is being developed with financial assistance of AEPC/NRREP.

CREF has provided financial assistance to install 36 small scale solar irrigation projects in Chitwan district and financial closure of the 200 kW Simrutu Khola Mini Hydropower Project, which is expected in early to 2017. The Simrutu Khola project costs NPR 87.04 million. The Simrutu Khola Mini Hydro Cooperative has already collected NPR 20 million from beneficiary households as equity. The project will receive NPR 57 million as subsidy from AEPC. The remaining NPR 10 million will be provided by Civil Bank as loan against the Credit Guarantee mechanism established by CREF.

RERL has been collaborating with SASEC/AEPC to prepare documents of 3 mini hydropower projects to be jointly promoted by the two projects. The detailed feasibility studies of these projects have been shared with the 7 Partner Banks of CREF. RERL also organized a field visit to Juddi Khola project site, Bajura for Loan Officer of Civil Bank to assess the local situation for processing loan. Juddhi Khola mini hydro is a 200 kW project located in a remote area in Bajura district. The community requires a loan of about NPR 5 M to complete the project.

**Progress on Output2b.1:** Demonstrated PPP models facilitating cooperation between sector, public sector, and organizations through establishment of Special Purpose Vehicles (SPV) in three selected mini hydro projects (1 MW)

RERL has already carried out Detailed Feasibility Study of 9 mini hydropower projects with the total installed capacity of more than 2MW. The projects that achieve financial closure will be developed as demonstration projects totaling 1 MW capacity and the rest will be supported for achieving financial closure as post demonstration projects. In 2016, RERL carried out different studies to complete the project documents of the following mini hydropower projects;

Table 3: List of Mini Hydro Projects

S.N.	Project	kW	Location	Studies Undertaken
1.	Giri Khola	200	Jumla	Transmission Line&Environment. Assessment
2.	Simrutu Khola	200	Rukum	Environment Assessment
3.	Namche Khola	184	Solukhumbu	Detailed Feasibility
4.	Manjo Khola	512	Solukhumbu	Environment Assessment
5.	Bom Khola	187	Solukhumbu	Environment Assessment
6.	Lumding Khola	950	Solukhumbu	Prefeasibility
7.	Phawa Khola	360	Taplejung	Transmission Line & Environment Assessment

Communities of Giri Khola, Tara Khola, Junbesi Khola and Pawa Khola Mini Hydrooowr Projects have already initiated the civil works of their respective projects. As both the RE Subsidy Policy and Subsidy Delivery Mechanism were approved in 2016, it is expected that the financial closure of these and other AEPC supported projects will be completed in 2017. RERL is providing technical assistance to establish Special Purpose Vehicle in Juddi Khola, Simrutu Khola, Bom Khola and Phawa Khola Mini Hydropower Projects.

### **Progress on Output 2b.2:** Demonstrated a financially sustainable and reliable mini grid connecting 300 kW micro hydro systems

RERL is supporting AEPC to implement the World Bank funded Kabeli Transmission Project, Component 3. The Taplejung Mini Grid interconnecting 6 mini/micro hydropower plants to evacuate electricity to the district headquarters is being developed under this project. RERL has provided assistance to finalize the detailed feasibility study of the project and establishment of Taplejung Mini Grid Development Functional Group. RERL is also supporting the communities to procure goods and services following IDA procedures. RERL also provided assistance to assess bids for installation of 11 kV transmission line, preparation of Vulnerable Community Development Plan and Environment Assessment related to the mini grid. The Taplejung Mini Grid Functional Group has already completed the installation of 37 km 11 kV transmission line.

### **Progress on Output 2b.3:** Demonstrated large scale solar PV systems under relief and rehabilitation activities and through Technical Assistance (500 kW total)

**Detailed Feasibility Studies:** RERL undertook a **DFS of a 100 kW solar PV system for grid connection** at Rairang Mini Hydropower Plant site, Dhading. The DFS shows that grid connection is financially feasible only if the project gets NPR. 10 per kWh with equity of only 5% and 95% grant.

RERL also carried out DFS of Solar Irrigation Projects at Madi, Chitwan, Telkuwa, Bara and Raksirang, Makwanpur. RERL also carried out DFS of Solar PV Mini Grids at Saptami Bazaar, Panchthar, Sarandanda VDC.

**Business Opportunity Assessment (BoA):** RERL is supporting the communities of Dubung, Baidi, Tanahun to carry out business opportunity and detailed business plans of micro enterprises operated by the 18 kWp **Baidi Solar Micro Grid** installed with the financial assistance of AEPC and UNESCAP under the 5P Project. With RERL's support, business plans of 2 larger enterprises and 18 smaller ones have been prepared. The project is owned and operated by a Special Purpose Vehicle call Baidi Solar Micro Grid Pvt. Ltd jointly owned by the beneficiary households and Saral Urja of Kathmandu. The project was inaugurated by Minister of Population and Environment in December 2016.



RERL jointly with DDC Khotang carried out Business Opportunity Assessment in Khotang Mini Grid (35 kWp) catchment areas to promote productive energy uses. The solar mini grid is developed by a SPV owned by the local beneficiaries and Gham Power Company.

**Solar Irrigation:** RERL provided technical and financial assistance to promote solar irrigation projects in Bara and Chitwan districts. In Bara, RERL is working with the farmers of Telkuwa VDC to develop a 4 kWp Solar Irrigation Project. The project is owned by Telkuwa Krishi Company, a joint venture of local farmers and a private company. Technical design and financial closure of the project has been completed. The SPV will supply water to farmers and help them engage in vegetable production and marketing.

In Chitwan, RERL worked closely with CREF to pilot household sized solar Irrigation Projects through Vendor Financing Mechanism. RERL provided a grant and a loan guarantee to Sun Farmer to install 5 household sized PVPS in Chitwan district. Sun Farmer has already installed 36 such systems in Chitwan and is planning to expand its activities in Morang and Jhapa districts too. This piloting will provide valuable lessons to finalize Vendor Financing Manual being developed by RERL and CREF for up scaling the model.

RERL is working with UNESCAP under the 5P Project to promote solar PV based water supply systems in Raksirang VDC of Makwanpur district. Most of the inhabitants of the VDC belong to the extremely marginalized Chepang community. This project is also developed by a Special Purpose Vehicle jointly owned by the beneficiary households and Saral Urja. Three integrated water supply and irrigation projects to enhance agricultural productive are being developed under this project. The 26.4 kWp Raksirang Solar MUS project directly benefits 93 households.

**Dhading Solar Project:** RERL provided technical assistance to extremely marginalized Chepang community of Mahadevsthan VDC, Dhading to implement **Dhading Solar Project** funded by Gyeongsangbuk – do Provincial Government of Republic of Korea. Under this project, 3 solar PV mini grids, 1 solar water lifting system and a micro industrial hub has been installed to provide clean energy access to 48 households located on a hill top. Besides better lighting, the communities is also benefitting from tapped water supply system, improved irrigation and agro-processing facility.

**Institutional Development:** RERL is working with DDC Makwanpur to establish a cooperative in Bhorleni, Makwanpur to manage the **25 kW wind-solar hybrid system installed** with AEPC's support. The cooperative will bring all 140 beneficiary households together to sustainably operate the system.

**Technical Assistance:** RERL is also working closely with South Asia Sustainable Economic Cooperation (SASEC) of AEPC and the Asian Development Bank to support development of solar PV mini grids. RERL is providing technical assistance to identify, study, design and implement projects under SASEC. Two Solar PV mini grid at Surkhet (8kW) and Achham (30 kW) are under construction.

RERL provided technical assistance to AEPC to develop the 26kWp Jumla Solar Wind Hybrid Mini Grid at Tatopani VDC.

**Relief and Rehabilitation:** RERL reallocated USD 1 M in 2015 for relief and rehabilitation of renewable energy systems in earthquake affected areas. The marginalized Tamang ethnic group was the single most affected population by the earthquakes. So far RERL has provided assistance to install 59.8 kW of different solar solutions such as mobile phone charging stations and institutional solar for office operation and education. In 2016, RERL supported to install 111 institutional solar systems in schools, healthpost and public offices, directly benefitting more than 88,559 people from services provided by these schools and healthposts.

RERL has provided financial and/or technical assistance in 261.5 kWp solar PV systems supported by AEPC since 2015.

Table 4: List of Solar PV Systems

S.N	Project	kWp	Location	RERL Support
1	Bhorleni Solar Wind Hybrid Mini Grid	25	Makawanpur	Technical Assistance & Cooperative establishment
2	Jumla Solar Wind Hybrid Mini Grid	26	Jumla	Technical Assistance
3	Baidi Solar Micro Grid	18	Tanahun	Technical Assistance for business opportunity assessment
4	Khotang Solar Mini Grid	35	Khotang	Technical Assistance for business opportunity assessment
5	Dhading Solar Project	10.6	Dhading	Technical and Financial Assistance
6	Telkuwa Solar Irrigation Project	4	Bara	Technical and Financial Assistance
7	Solar Micro Irrigation Projects	1.5	Chitwan	Technical and Financial Assistance
8	Raksirang Solar MUS Project	26.4	Makawanpur	Technical Assistance
9	Institutional Solar at TUTH	115	Kathmandu	Technical Assistance
<b>Total</b>		<b>261.5</b>		

**Progress on Output 2b.4:** Operationalized 2 MW of off-grid large micro-hydro (over 60 kW) power projects demonstrating cost-advantage, feasibility, productive end-uses, and best practice through technical assistance and rehabilitation of MHP damaged by earthquakes

In 2016, AEPC supported rural communities to install 43 MHPs with the total capacity of 2,045 kW benefiting 17,613 households, RERL provide technical assistance in these projects including verification of documents submitted by POV Inspectors to release final installment of subsidy for completed MHPs.

Similarly, under rehabilitation activities, RERL provided technical and financial support to 63 MHPs for rehabilitation in 2016 of which 26 MHPs with 662 kW capacity and benefiting 6,617 HHs have been brought back to operation. RERL also carried out detailed assessment of 45 MHPs with total capacity of 1,193 kW in Baglung, Gorkha Okhaldhunga, Solukhumbu, Ramechhap, Sindhuli.

**Progress towards Outcome 3:** Improved design and packaging of investment support mechanisms for rural RE and other low-carbon technology applications

This outcome deals with improved design and packaging of investment support mechanisms for rural RE and low-carbon technology applications. RERL project has been coordinating with UNCDF in preparing the business plan of CREF. Once the Business Plan is prepared, RERL intends to support USD 100,000 each for establishing financing mechanisms to domestic manufacturers and financial institutions to promote mini hydro and large solar PV projects. This token amount is expected to kick start the mechanism. RERL is also working with UNCDF to prepare a Vendor Financing Manual to involve private sector in developing and managing RE projects. To encourage private sector and Banks and Financial Institutions (BFIs) in the sector, RERL helped organize Investors' Forum jointly with AEPC and Asian Development Bank and showcased potential mini hydro projects. RERL has organized several site visits for BFIs interested in lending to mini hydro projects. However, so far the BFIs have indicated reluctance to finance RE projects in rural areas because they consider this venture as high risk. BFIs primarily lack confidence in the projected cashflow of the project due to issues on tariff collection unlike grid connected projects where PPA provides some

assurance for regular cash flow into the project. The perceived risks are amplified with community projects because of risks with management and technical knowhow of the community as well as the legal basis of the organizations.

A detailed study was carried out by RERL to identify reasons for BFI's reluctance to finance and the support required to look at the investment as less risky. The study clearly recommends actions for attracting private investment in the RE sector in general and community owned projects in particular. The study has been widely discussed and disseminated and plans to be integrated into the CREF's Business Plan.

The project is working closely with the Productive Energy Use Component (PEUC) of AEPC in providing technical assistance in preparing business plans of projects. It has collaborated closely to develop capacity of local entrepreneurs and creating awareness on RE systems and enterprises through conduction of various training, exhibitions, etc.

RERL is collaborating with Clean Start Project of UNCDF to prepare a manual on **vendor financing of small scale renewable energy systems** like solar home system, solar pumping, biogas, etc.

**Progress on Output 3b.1 and 3b.2:** Designed and provided technical support for financing platforms and services for promoting commercial financing for domestic manufacturers and mini hydro and large solar PV projects

In 2015, RERL initiated review of existing challenges in RE financing and development of viable mechanisms to address them so that the BFIs are willing to finance RE projects on commercial basis. The study indicated that the BFIs perceive lending to communities in rural areas in general is very risky and thus are reluctant to fund RE projects as well. To help reduce the risk of the BFIs, RERL supported CREF in 2016 to establish Credit Guarantee Mechanism for both mini hydro and solar PV projects. CREF is providing Credit Guarantee to Civil Bank to provide Soft Credit Facility to Simrutu Mini Hydropower Project. RERL fund will be utilized for Credit Guarantee and SASEC fund for both grant and soft credit. The financial closure of this project is expected in early 2017. Likewise, CREF provided Credit Guarantee and Grant support to Sun Farmer to install 5 household sized solar irrigation systems in Chitwan district. Sun Farmer has already installed 36 such system in Chitwan and is planning to expand its activities in other districts as well.

**Progress on Output 3b.3:** Developed training materials on mini-hydro and large-scale solar PV projects for financing institutions

RERL assisted CREF to **design training materials for banks on mini-hydro and large-scale solar PV financing**. RERL and CREF organized a one day orientation to the representative of partner banks on 10 March 2016. The training material includes technical aspects of min/micro hydro and solar PV systems, the role of AEPC and development partners in promoting these technologies, subsidy policy and subsidy delivery mechanism, case studies of successful and unsuccessful micro-hydro projects, risks and challenges in financing these technologies, and viable financial instruments which can motivate Bank and Financial Institutions (BFIs) to provide loans.

**Output 3b.4:** Created matchmaking platform for mini-hydro and large-scale solar PV developers, financing institutions, and equity investors, and productive end users

RERL provided assistance to CREF to **Design of Commercial Financing Instruments for Mini-hydro and Large Scale Solar PV Project** to look into reluctance of Banks and Financial Institutions to provide credit to mini/micro hydropower projects and to identify financing instruments to encourage them to lend to renewable energy projects. A comprehensive report that identifies problems and recommends solutions to

attract private investment in mini/micro hydropower projects has been prepared and discussed extensively with CREF partner banks.

The report has focused on the background of renewable energy technologies; financial, environmental, legal, and economic analysis of mini-hydro and large scale solar PV; management and institutional auditing; renewable energy financing risk and risk mitigation instruments, and viable financing modalities for mini-hydro and large scale solar PV technologies. This report has suggested that establishing credit guarantee mechanism, incentivizing the banks, loan insurance etc. can help banks to finance in RE sector.

RERL assisted AEPC to organize the Investors Forum in collaboration with ADB. 4 Mini Hydropower Projects were presented to attract private funding.

RERL assisted Millennium Challenge Corporation Nepal to organize information sharing event calling for proposals to develop off grid RE projects in Nepal. MCC is a US Government programme that intends to promote off grid RE projects through private sector participations. RERL on behalf of AEPC is facilitating RE related activities of MCC.

RERL/AEPC/NRREP/SASEC have interacted with CREF PB to attract credit flow several times. Detailed Project Reports of 4 Mini Hydropower Projects were presented to CREF Partner Banks separately to attract credit. However, the Banks have put forward conditions for lending.

### **Progress on Output 3b.5: Functional enterprises adopting productive use of electricity**

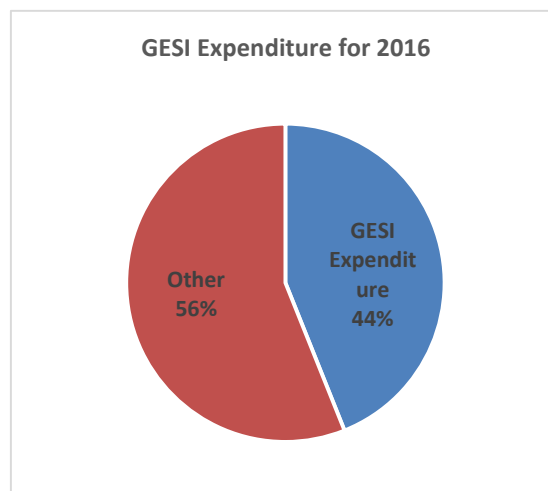
In 2016, RERL provided technical assistance to productive energy use component of AEPC/NRREP to establish 443 Micro Small and Medium Enterprises (MSME) and 3,151 (1,938 female and 1,213 male) income generating activities benefiting 14,809 people. In addition, RERL is undertaking a study to demonstrate impacts of productive end uses on livelihoods of women.

RERL carried out an analysis of **energy consumption patterns of 15 micro hydropower projects** in 2016 in collaboration with Institute of Engineering, Tribhuvan University. All of these plants have digital energy meters installed under Clean Development Mechanism supported by the World Bank. The energy use patterns are different for different plants. With the use of highly efficient lighting appliances like CFL and LED bulbs, the amount of electricity consumed for lighting has drastically come down in some plants, consequently decreasing the plant load factor. Other plants with considerable number of productive uses have plant load factor above 60%.

RERL organized “**Business Management Training to Women Entrepreneurs**” 48 women entrepreneurs from Far-Western and Mid- Western Regions participated in the training. The main objective of the training was to impart knowledge on business management particularly on entrepreneurship, book keeping and marketing of their businesses.

RERL supported PEUC to organize training in collaboration with Handpass for lokta entrepreneurs in Gandruk from 20 to 23 March 2016. Altogether 14 lokta entrepreneurs from different parts of the country participated in the training of which 2 were women participants. The entrepreneurs learnt about the sustainable harvesting, quality production, waste management and technology improvement. The lokta boiling technology using electricity and quality standards and requirements of lokta paper exporters.

RERL supported three innovative projects that help fuel switching from firewood to electricity. RERL helped to locally design and fabricate an electric lokta bark boiler and install it at a Nepali paper factory in Ghandruk, Kaski. After comments from the Ghandruk entrepreneur, RERL further modified the design and fabricated a prototype and tested it. Based on the new design a lokta bark boiler was fabricated and installed in Ramechhap district by a local entrepreneur with financial assistance from Rapid Enterprise and Livelihoods Recovery Project (RELRP). Similarly, RERL is supporting to design and fabricate a nettle leaves dryer (Sisno dryer). The dryer has been fabricated and transported to Baglung. The Sisno dryer will be managed by the Nisi Sisno Powder Udhayog owned by 15 women entrepreneurs. The enterprise will be providing employment opportunity for 15 ultra - poor women during collection time.



In order to exchange knowledge on technology transfer in Allo (Himalayan Nettle) Value Chain, RERL and AEPC jointly organized “Stakeholder Consultation Workshop”. The Allo entrepreneurs, Traders and Value Chain Experts participated in the workshop. In the workshop, an entrepreneur from Sankhuwasabha shared his experiences on difficulties on allo boiling and requested for an electric boiler to help reduce fuelwood consumption and increase boiling efficiency. RERL plans to test the Lokta Boiler it has helped develop to boil allo.

RERL provided technical assistance to PEUC/AEPC to prepare 45 business proposals for small enterprises powered by MHPs. The business plans have been submitted to AEPC for government subsidy.

RERL is supporting beneficiaries of the 83kW Darna MHP, Achham to run their MHP as an enterprise by selling surplus power to 500 HHs from neighboring Kalagaun VDC. With RERL support a cooperative has been formed in Darna VDC and another cooperative in Kalagaun is being formed. The people of the two VDCs have signed a Power Purchase Agreement to export 25 kW from Darna to Kalagaun. The people of Kalagaun have mobilized equity and grant from WISIONS, Germany and Kalagaun VDC to construct 11kV transmission line and distribution line.

Similarly, to promote MHP as enterprise in other areas, RERL carried out a quick assessment of 30 MHPs to understand the attitude of the beneficiary communities towards leasing out their MHPs to private entrepreneurs for operation and management. Before doing the assessment a 2 days’ orientation on MHP as an enterprise model was conducted in all MHPs. However, it was found that in almost all MHPs the sense of ownership is so strong that beneficiaries are extremely reluctant to lease out their properties to private parties. On the other hand, they all agree to operate and manage their MHPs through cooperatives. RERL thus plans to support communities in 14 earthquake affected districts to establish cooperatives to run MHPs as enterprises.



**Progress on Output 3b.7:** Ensured women and marginalized/vulnerable groups own 33% of the functional electricity based enterprises established

RERL organized Business Management Training for 25 women entrepreneurs from the Far Western Development Region in 2016 following its plan to provide training on Business Management to all women entrepreneurs receiving AEPC support. So far, RERL has provided such training to 90 women entrepreneurs from all 5 development regions. To ascertain the impact of Business Management Training, RERL also carried out a study in 2016. The study indicates that all 17 women interviewed believe that the training has helped improve their knowledge and capacity on accounting and bookkeeping, accessing market and enhanced their communication abilities.

**Progress towards Outcome 4:** Enhanced capacities and skill of various stakeholders in the RE sector

This outcome focus on enhancing capacities and skill of various stakeholders in the RE sector. The capacity building of the private sector has been actively pursued by the project by organizing various technical training to upgrade and update engineering know-how on larger RE systems like mini hydro and large scale solar PV. The project has carried out gap analysis for the mini hydro sector and is worked very closely with the World Bank to carry out capacity need assessment of the whole sector. The project has also supported in local fabrication of digital electronic load controller, pre-paid meter and several end-use technologies.

**Progress on Output 4.1:** Established database of technical specifications for the design, manufacture for micro hydro (60+ kW) and mini hydro, installation and after sales service in micro hydro (60+ kW) and large scale solar PV systems

RERL/AEPC worked with National Academy of Science and Technology (NAST) in 2016 to prepare Capacity Needs Assessment (CNA) of RE sector with the WB funding. The CAN has been shared with all stakeholders including the development partners. It is expected that this document will provide for assistance to AEPC and other stakeholders in capacity development related activities in future. Earlier, in 2015, RERL had carried out capacity gap in the mini hydro sector.

**Output 4.2:** Fully trained skilled and technically capable people available for project identification, feasibility studies and detail design of RE projects

In 2016, RERL organized a training for Department of Electricity Development (DoED) on Large Solar PV for Grid Connection. 26 DoED engineers participated in the training, including 2 Women.

RERL supported AEPC to update Power Output Verification (POV) Guidelines of micro hydropower projects. The updated guidelines also include mini hydropower projects above 100 kW. 25 Independent POV Inspectors, including a woman, were provided orientation and training on the updated POV Guidelines.

RERL supported Monitoring and Quality Assurance Unit (MQAU) of AEPC to Piloting of **Sustainable Framework for monitoring of micro hydro**. The framework identified all relevant dimensions for sustainability, measureable indicators, software to record and analyze and make evidence based decision.

**Output 4.5:** Fully trained skilled and technically capable people available for operation, maintenance and business management

RERL worked with Renewable Energy (RE) Source of AEPC to organize refresher training for MHP Operator from the Mid and Far Western Development Regions. 22 participants were provide training.



Similarly, RERL and RE Source jointly organized training for MHP Managers from Mid and Far Western Regions. 20 participants were trained on various aspects of a successfully managed MHP and visited Khamari Khola MHP, Surket for practical training and observation.

**Progress towards Outcome 5:** UNDP provides support to Government of Nepal in particular National Planning Commission (NPC) in realizing SEforALL agenda in Nepal. The SEforALL process involves four major steps on country implementation- Country Opt-in, Rapid Analysis and Gap Assessment, preparation of national country actions and its implementation and monitoring

The project contributed in preparation and approval of RAGA for SEforALL, drafted country action agenda through consultative process. Draft document of Country Action Agenda was circulated from NPC to more than 60 stakeholders of the high level coordination mechanism, and the three thematic coordination group members. The draft CAA was presented to NPC VC and the members and upon their recommendation, three thematic workshop on energy access, energy efficiency and renewable energy was organized in receiving the comments and feedback. The CAA was sent to SEforALL global facilitation team among its quality circle members for feedback. With incorporating the feedback from various stakeholders through these workshop and some separately sent feedback the CAA is finalized. It is ready to be presented in the high level mechanism and then its formal launch. With this Nepal is the first country in the Asia Pacific to produce comprehensive CAA through extensive consultation process.

The Investment Prospectus (IP) is to be produced through consultant and is planned for 2017. Investment prospectus (IP) is prepared to identify and mobilize the required investments for implementation of the SEforALL Country Action Agenda in realizing SEforALL objectives. Investment prospectus will consider the agenda identified by CAA and propose a roadmap and investment plan to achieve the objectives of CAA by 2030. In this regards, several round of interaction were held with stakeholders and then a ToR is drafted. It will go for competitive bidding process to select the consultant and the actual work will be initiated.

NPC is the main coordinating body for implementation of SEforALL agenda in Nepal and has so far been supportive for this program implementation. However, with the space crunch situation after the earthquake, the technical support team is working from UNDP project office. Lately in 2016, there has been changes in NPC portfolio and the program activities has been halted however there has been continuous efforts for effective functioning of the program. NPC organized with support from the SEforALL technical team to organize consultative workshops on energy access, energy efficiency and renewable energy to receive inputs and feedback in finalizing the country action agenda. Due to shuffle in NPC structure with the change in the government, the coordination mechanisms could not be organized. One of the key area for 2017 is to provide required support and knowledge in NPC to establish functional SEforALL in NPC that can do effective monitoring of the proposed action agenda.

A high level orientation and training program on SEforALL mechanism was organized to provide detail overview of the SEforALL process and its implementation and monitoring mechanisms. 14 participants from various government organization participated in the training. SEforALL provided support to organize international seminar on “Ensuring Resilient and Sustainable Energy Future: Linking Post-earthquake Reconstruction in Nepal” to Flensburg Association of Energy Management (FAEM) Nepal. The event was participated by more than 100 national and international experts and SEforALL leveraged that forum to provide progress and challenges for SEforALL implementation in Nepal through a technical presentation. The program supported to the National Program Director of RERL/SEforALL in participating to the side events of SEforALL thematic area in the Conference of Parties (CoP)/UNFCCC held in Marrakech, Morocco from 7-18 November 2016. The learning from the forum will contribute in achieving sustainable energy development, as well as leading and coordinating skills for implementation of SEforALL and other similar

initiatives. These initiatives have significantly contributed for capacity enhancement of the government in disseminating its activities and in institutionalizing SEforALL.

The SEforALL is a multi-stakeholder platform where various stakeholders contribute in realizing its objectives. SDG 7 of 2030 Agenda for Sustainable Development has adopted the these objectives and has targeted to achieve it through enhanced international cooperation, promote investment in energy infrastructure and upgrade technology for supplying modern and sustainable energy services. Government of Nepal is committed on achieving these SDG goals and the relevant plan, policy and program would be directed towards achieving these global goals. This project will support government through technical support, capacity development in institutionalizing this initiatives at the national level with preparation of relevant documents, and exchange of knowledge and best practices in this initiatives.

## 5.2 Progress on Project Outputs

Table5: Progress on Output Indicators

Table 1: Progress on Output Indicators								
Output statement	Output indicator	Baseline	Cumulative Target for 2013 - 2017	Progress up to 2015	2016 Milestone	2016 Progress	Cumulative progress up to 2016	Means of verification
Output 1.1 Output Approved and enforced policy that enables PPP model for mini hydro and large scale solar PV development, including fiscal incentives and sustainability for possible changes in Nepal government structure	Policy document on RE is in place	Rural Energy Policy 2006	RE Policy, GESI sensitive subsidy policy, subsidy delivery mechanism and draft RE Act submitted to GoN	<ul style="list-style-type: none"> <li>- RE Subsidy policy revision submitted to government</li> <li>- NEA Board approved Technical Standard for interconnection of MHP with the grid</li> <li>- Documents for Power Purchase Agreement between NEA and 2 MHP submitted to NEA</li> <li>- Draft Technical Standard for interconnection of solar PV with grid prepared</li> <li>- Prepared concept documents to address energy crisis resulting from border blockade prepared and</li> </ul>	<ul style="list-style-type: none"> <li>Finalization of RE Subsidy Policy</li> <li>RE Subsidy Delivery Mechanism finalize Finalization of net metering standard for rooftop solar system</li> <li>Guideline preparation for licensing large scale solar system in coordination with DOED</li> </ul>	<ul style="list-style-type: none"> <li>RE Subsidy Policy approved by GON</li> <li>RE Subsidy Delivery Mechanism drafted and submitted to AEPC</li> <li>Joint meeting between AEPC and NEA has been held and working on net metering standard</li> <li>Procurement process ongoing</li> </ul>	<ul style="list-style-type: none"> <li>RE Subsidy Policy approved by GON</li> <li>NEA Board approved Technical Standard for interconnection of MHP with the grid</li> <li>Documents for Power Purchase Agreement between NEA and 2 MHP submitted to NEA</li> </ul>	<ul style="list-style-type: none"> <li>RE Subsidy Policy</li> <li>Technical Standard publication</li> </ul>

				submitted to the GoN				
Output 1.2 Methodology and database developed and made available for incorporating mini hydro and large scale solar PV systems into district RE plans	No. of integrated district RE plans prepared	NA	District Renewable Energy Master Plan (DREMP) prepared for 15 DDCs	District Rural Electrification Master Plan completed for Gorkha district	7 District Electrification plan prepare	Discussion with NEA ongoing. Thus activity has been shifted to 2017 and 2018	District Rural Electrification Master Plan completed for Gorkha district  Discussion with NEA ongoing. Thus activity has been shifted to 2017 and 2018	
Output 1.3 Completed training and awareness programs for relevant government agencies and stakeholders on mini-hydro and large-scale solar PV systems development and on productive end uses	No. of trainings conducted	NA	3 case studies prepared and 6 trainings conducted	- Large Scale Solar PV Case Study completed - 1 training on design of large SPV for DEECCS - Preparation for Exhibition to create awareness on RE technologies - 1 Training on DFS of Mini Hydro and 1 training on GIS for AEPC completed	Case study on performance of pre-paid meter  Case study on inclination and orientation of rooftop solar system	Planned for 2017  Planned for 2017	Large Scale Solar PV Case Study completed - 1 training on design of large SPV for DEECCS - Preparation for Exhibition to create awareness on RE technologies - 1 Training on DFS of Mini Hydro and 1 training on	Case Study/Completion report

							GIS for AEPC completed	
Output 2a.1 : Commissioned mini-hydro demonstration projects totaling 1 MW through PPP model	No. of mini hydro demonstration projects commissioned	NA	1 mini hydro project initiated	RERL is supporting CREF banks for financial closure	Initiate financial closure of 1 MHP	1 financial closure completed (Simrutu MHP)	RERL is supporting CREF banks for financial closure  1 financial closure completed (Simrutu MHP)	Bank Commitment /Meeting Minutes
Output 2b.1: Demonstrated PPP models facilitating cooperation between private sector, public sector, and local organizations through establishment of Special Purpose Vehicle (SPV) in three selected mini-hydro projects (1 MW)	No. of projects strengthened	NA	5 institutions strengthened including SPVs	- Guidelines for developing mini hydro under PPP model developed  -Initiated financial closure of 2 mini-hydro projects (Tap Khola 2,600 HHs and Giri Khola 2,000 ) totaling 500 kW  - Institutional support for 2 SPVs on-going (PhawaKhola, Tara Khola) - DFS of 9 mini hydro with total capacity of 2 MW completed Institutional support for 2 SPVs on-going	Finalize financial closure 2 mini hydro	Financial closure of 1 mini hydro completed	Financial closure of 1 mini hydro completed  Guidelines for developing mini hydro under PPP model developed  Initiated financial closure of 2 mini-hydro projects (Tap Khola 2,600 HHs and Giri Khola 2,000 ) totaling 500 kW  Institutional support for	Detailed Feasibility Report  PPP Guidelines  Bank Commitment

				(PhawaKhola, Tara			2 SPVs on-going (PhawaKhola, Tara Khola) - DFS of 9 mini hydro with total capacity of 2 MW completed Institutional support for 2 SPVs on-going (PhawaKhola, Tara	
Output 2b.2: Demonstrated financially sustainable and reliable mini-grid connecting ten (10) micro-hydro systems (300 kW)	No. of mini-grid and grid connection supported - 1 mini-grid interconnecting 2 MHP with capacity of 218 kW in Gulmi completed - 1 mini grid interconnecting 6 MHP with the capacity 106 kW in Baglung revived - Due deligence of 1 Mini Grid inteconnecting 8 MHP with the total capapcity of	NA	1Mini-grid interconnecting 10 MHP with 300 kW capacity	1 mini-grid commissioned in Gulmi district benefiting 2,300 HHs Taplejung Mini Grid Development Functional Group established.  Due diligence of TMG interconnecting 7 MHP completed. Bid document is being prepared to procure equipment	Taplejung mini grid will be constructed  Piloting of Grid connection of 2 MHPs	Erection of Transmission and Distribution is in progress  Procurement process ongoing	Erection of Transmission and Distribution is in progress  1 mini-grid commissioned in Gulmi district benefiting 2,300 HHs Taplejung Mini Grid Development Functional Group established.  Due diligence of TMG interconnect	Commissioning Report



	900kW completed and procurement initiated						ing 7 MHP completed. Bid document is being prepared to procure equipment	
Output 2b.3: Demonstrated financially sustainable and reliable large scale solar PV systems (500 kW total)	Support to pilot large scale solar PV systems ,Support to install Solar PV systems under relief and rehabilitation	NA	Solar PV systems with the total capacity of 500 kW installed	41 kW solar PV Systems installed - 8 kW directly by RERL under relief and rehabilitation - assisted AEPC to develop business plan for 18 kW solar mini grid under 5P - Assisted AEPC to initiate institutionalization of 15 kW Solar and 10 kW Wind Hybrid system in Makwanpur - Rapid assessment of 42 solar pumping systems completed	30 kW solar PV Systems installed	31.2 kW solar PV systems were installed	31.2 kW solar PV systems were installed  41 kW solar PV Systems installed 8 kW directly by RERL under relief and rehabilitation n assisted AEPC to develop business plan for 18 kW solar mini grid under 5P Assisted AEPC to initiate institutionalization of 15 kW Solar and 10 kW Wind Hybrid system in Makwanpur	Project MIS

							Rapid assessment of 42 solar pumping systems completed	
Output 2b.4: Operationalized 2 MW of off-grid large micro-hydro (over 60 kW) power projects demonstrating cost-advantage, feasibility, productive end-uses, and best practice through technical assistance	Technical assistance for large micro hydro systems and TA and financial assistance to rehabilitate MHPs damaged by earthquakes	Previously installed MHPs	- 1.8 MW MHP installed and rehabilitated - 25,000 households have access to energy	- 2 DFS completed - 3,581 new households (RERL and NRREP) have access to electricity - Rapid assessment of 140 MHP affected by earthquakes completed. - USD 176,493 for rehabilitation of 31 MHPs, 755 kW, 7,500 hh for immediate rehabilitation transferred to DEF	Produce 3 MW electricity from Micro Hydro and Solar PV	Total 3.25 MW electricity generated (2.4 MW from new Micro Hydro+ 0.66 MW from rehabilitated MHP + 0.19 MW from solar PV)	Total 3.25 MW electricity generated (2.4 MW from new Micro Hydro+ 0.66 MW from rehabilitated MHP + 0.19 MW from solar PV)  2 DFS completed 3,581 new households (RERL and NRREP) have access to electricity  Rapid assessment of 140 MHP affected by earthquakes completed. USD 176,493 for rehabilitation of 31 MHPs, 755	Project MIS

							kW, 7,500 HH for immediate rehabilitation transferred to DEF	
Output 2b.5: Completed financial closure of 7 MW of off-grid mini-hydro power projects replicating PPP model through establishment of SPVs, demonstrating cost-advantage, feasibility, productive end-uses, and best practice through technical assistance	DFS of mini hydro	NA	DFS of 1 MW mini hydro completed	DFS of 5 Mini Hydro Complete benefiting more than 5,000 hhs	Procurement process ]	Bid document prepared	Bid document	Bid document
Output 3a.1: Established a financing instrument to incentivize Banking and Financing Institutions for financing domestic manufacture		NA	NA	NA	Establish of financing instrument for developer and manufacture	Financing instrument prepared and establishment process on going	Financing instrument prepared and establishment process on going	Financial Instrument/ Report
Output 3a.2: Established a financing instrument to incentivize Banking and Financing Institutions to commercial financing for mini hydro and solar PV		NA			Demonstration of several financial instrument such as Soft Credit, Credit Guarantee, Vendor Financing , LFI Financing	TOR for credit financing has been publish in AEPC website.	TOR for credit financing has been publish in AEPC website.	AEPC Website

					&Project Insurance			
Output 3b.1: Designed and provided technical support for financing platforms and services for promoting commercial financing for domestic manufacturers	Design of financial package for domestic manufacturers	NA	1 gap analysis conducted and 1 financial instrument developed	Gap analysis completed  Financial Instrument is being developed	CREF Business plan prepare	Consultant has been hired work initiated	Consultant has been hired work initiated	Inception Report
Output 3b.2: Designed and provided technical support for financing platforms and services for promoting commercial financing for mini-hydro and large-scale solar PV projects	Design of commercial financing instruments	NA	2 instruments developed	Gap analysis completed. Financial instruments being developed.  Credit guarantee mechanism for household scale PV pumping(PVPS) systems established at CREF. Under this activity, 5 PVPS are supported in Chitwan district.	Finalization of 2 financial instruments (Partial Credit Guarantee and Vendor Financing )  Mini Hydro debt/project insurance develop	Partial Credit Guarantee instrument completed  Vendor financing instrument implemented in Chitawn	Partial Credit Guarantee instrument completed  Vendor financing instrument implemented in Chitawn	CREF/Completion report
Output 3b.3: Developed training materials on mini-hydro and large-scale solar PV projects for financing institutions	No. of training materials for bankers	NA	1 training material prepared	The training material is being prepared	The training material prepare and conduct training	Training materials prepared& orientation of bank officials organized, 15 bank officials participated in the training	Training materials prepared& orientation of bank officials organized, 15 bank officials participated in the training	Training Report

Output 3b.4: Created matchmaking platform for mini-hydro and large-scale solar PV developers, financing institutions, and equity investors, and productive end users	No. of platforms created for matchmaking	NA	1 event organized and 1 website developed	Investor's Forum could not be organized as scheduled due to continuous strike and blockade	Organize Investor's Forum as postponed in 2015	Investor's Forum organized and 2 mini hydro project pitched for private investment	Investor's Forum organized and 2 mini hydro project pitched for private investment	Photos and Participants list
Output 3b.5: Functional enterprises adopting productive use of electricity	No. of productive use of electricity supported	NA	NRREP Target: -1300 new MSMEs - 2800 MSMEs upgraded	- 657 MSME were established by PEUC/NRREP, RERL provided direct technical assistance to establish 193 - Business Opportunity Assessment in Tanahun, Achham and Makwanpur carried out - MHP as an enterprise model developed - 2 innovative technologies for fuel switching from firewood to electricity developed and tested (Khuwa Making, Lokta Boiling), 1 technology under development (Nettle Leaves Drying)	MHP as an enterprise model in Darna, Achham  Initiated efficiency improvement of electric Lokta boiler	Management improvement for commercial operation of MHP  4 electric Lokta boiler technology fabricated and promoted at community level	Management improvement for commercial operation of MHP  4 electric Lokta boiler technology fabricated and promoted at community level  657 MSME were established by PEUC/NRREP, RERL provided direct technical assistance to establish 193 Business Opportunity Assessment in Tanahun, Achham and	Report/Project MIS

				<ul style="list-style-type: none"> <li>- Framework for development of industrial cluster prepared. 2 potential rural industrial clusters identified. Field work on-going in 1 cluster in Achham</li> <li>- 9 lift irrigation projects studied. 2 lift irrigation projects (benefitting 45 HH) constructed with EDM funding and 3 under construction.</li> <li>- Draft MoU between AEPC and Department of Irrigation to develop lift irrigation projects prepared.</li> <li>- Locally developed pre-paid meter</li> <li>- Energy consumption pattern of MHPs being studied.</li> </ul>			<p>Makwanpur carried out MHP as an enterprise model developed 2 innovative technologies for fuel switching from firewood to electricity developed and tested (Khuwa Making, Lokta Boiling), 1 technology under development (Nettle Leaves Drying) Framework for development of industrial cluster prepared. 2 potential rural industrial clusters identified. Field work on-going in 1 cluster in Achham</p>	
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							- 9 lift irrigation projects studied. 2 lift irrigation projects (benefitting 45 HH) constructed with EDM funding and 3 under construction . Draft MoU between AEPC and Department of Irrigation to develop lift irrigation projects prepared. Locally developed pre-paid meter Energy consumption pattern of MHPs being studied.	
Output 3b.6: Operationalized mechanism to promote financial products for entrepreneurs/end users	No. of trainings and orientations to women and marginalized groups	NA	2 trainings orientations conducted	Concept note prepared	Micro Finance Institution mapping	Draft report submitted	Draft report prepared	Draft report

Output 3b.7: Ensured women and marginalized/vulnerable groups own 33% of the functional electricity based enterprises established	No. of trainings and orientations to women and marginalized groups	NA	2 trainings orientations conducted	<ul style="list-style-type: none"> <li>- 43 women were from Eastern and Western Development Regions were provided enterprise management training.</li> <li>- 74 women and 80 men benefitted from skill based trainings on tailoring, computer education and bakery.</li> </ul>	Impact study of PEU on women	Impact study of PEU on women ongoing	Impact study of PEU on women ongoing	Study report
Output 4.1: Created a knowledge base of technical challenges and opportunities in the design, manufacture (for micro-hydro (+60 kW) and mini-hydro), installation and after-sales service in micro-hydro (60+ kW), mini-hydro and large scale solar PV systems	No. of monitoring and quality assurance mechanism and framework	NA	1 gap analysis, 1 monitoring system, 2 quality assurance mechanism, 1 framework developed, and 1 workshop	<ul style="list-style-type: none"> <li>- 1 gap analysis on manufacturing of mini hydro components in the country completed.</li> <li>- 2 monitoring and quality assurance mechanism for mini/micro hydro and solar PV developed.</li> <li>- Sustainability framework tested and 1 workshop organized to finalize. Piloting on 10 MHPs initiated.</li> </ul>	Installation of 3 Remote Monitoring Systems	3 Remote Monitoring Systems completed in Sindhuli, Okhaldhunga and Kathmandu	3 Remote Monitoring Systems completed in Sindhuli, Okhaldhunga and Kathmandu	Installed site and completion report

				<ul style="list-style-type: none"> <li>- Remote monitoring system for large Solar PV developed.</li> <li>- Power Output Verification Guidelines of AEPC updated and POV for mini hydro included.</li> </ul> Training for engineers initiated <ul style="list-style-type: none"> <li>- Remote monitoring system for solar PV developed</li> </ul>				
Output 4.2: Fully trained skilled and technically capable people available for project identification, feasibility studies and detailed design of mini-hydro and large-scale solar PV systems	No. of trainings and manuals for developing skilled and technically capable people	NA	4 trainings and 2 manuals prepared	1 training on design of mini hydro completed. 25 engineers were trained. <ul style="list-style-type: none"> <li>- 10 engineers from solar equipment vendors were trained on designing large solar PV installations.</li> </ul>	Preparation of Power Output Verification (POV) Guideline and training	POV Guideline prepared and 25 engineers trained	POV Guideline prepared and 25 engineers trained	Guideline and Training report
Output 4.3: Fully trained skilled and technically capable mini hydro manufacturers in identified areas and their after-sales services	No. of new technologies for mini hydro	Old ELC, DLC, and Turbine	2 ELC, 2 DLC and 1 turbine technology designed	- Digital ELC for micro hydro developed and tested in the laboratory.	Implementation of digital ELC on piloting of grid connection of MHP	Procurement process ongoing	Procurement process ongoing	Reports

Output 4.4: Fully trained and technically capable construction and installation teams within companies to improve quality of installed mini-hydro projects and large solar PV system	No. of trainings for installation of large micro hydro	NA	1 training conducted	- Training on installation of large micro hydropower plants with 20 participants conducted. - Training manual for design and installation of large solar PV systems is being prepared.	Planned for 2017			
Output 4.5: Fully trained, skilled and technically capable people available for operation, maintenance and business management of mini-hydro projects and large scale solar PV	No. of people trained in mini hydro, large micro hydro and large scale solar PV system	NA	60 people trained and 3 trainings conducted on RE as business	NA	Conduct micro hydro operator training	22 micro hydro operator trained on management and operation		
<b>SEforALL</b>								
Output 5.1 Preparation of SEforALL Country Action Agenda and Investment Prospectus.	Final Country Action Agenda Prepared	N/A	Final Country Action Agenda Prepared	N/A	Country Action Agenda Approved.	Finalized Country action agenda through consultation. Awaiting approval of high level mechanism.	Finalized Country action agenda through consultation. Awaiting approval of high level mechanism.	Final Country Action Agenda Report.
	Prepare Investment Prospectus (IP)	N/A	Investment Prospectus Approved.	N/A	Initiated process for IP preparation.	Draft TOR is prepared and discussion held on process for its formulation.	Draft TOR is prepared and discussion held on	Draft TOR for IP.

							process for its formulation.	
Output 5.2 Institutionalization of SEforALL Nepal Secretariat.	Support NPC to carry out studies.	N/A	Various Studies Conducted.	N/A	Studies conducted.	TOR was published for conducting economic analysis of energy systems however the proposal did not match the requirement hence other comprehensive TOR is prepared to work in collaboration with RERL.	TOR was published for conducting economic analysis of energy systems however the proposal did not match the requirement hence other comprehensive TOR is prepared to work in collaboration with RERL.	TOR for Studies.
	Support SEforALL secretariat in NPC to conduct Seminars and Workshops	N/A	Seminar and Workshop Conducted.	N/A	Seminar and workshop conducted of thematic areas, coordination group meeting organized and national workshop conducted.	3 thematic consultative workshop held in energy access, energy efficiency and renewable energy to finalize the country action agenda. Supported FAEM Nepal in conducting international workshop and to leverage to forum to disseminate SEforALL activities.	3 thematic consultative workshop held in energy access, energy efficiency and renewable energy to finalize the country action agenda. Supported FAEM Nepal in	Workshop Reports.

						Coordination meetings could not be organized with changes in portfolio of NPC officials, and national workshop to launch CAA could not be organized pending approval from high level mechanism.	conducting international workshop and to leverage to forum to disseminate SEforALL activities. Coordination meetings could not be organized with changes in portfolio of NPC officials, and national workshop to launch CAA could not be organized pending approval from high level mechanism.	
Output 5.3 Capacity Building of NPC for implementing SEforALL.	Training program for NPC staff and other government officials.	N/A	Training conducted.	N/A	1 training conducted.	A high level training for NPC staffs and high level government officials with 14 participants.	A high level training for NPC staffs and high level government officials with 14 participants.	Training Report.
	Participation in seminars/workshops,	N/A	Participation for international events.	N/A		NPD of SEforALL participated in the COP 22 and side events of	NPD of SEforALL participated in the COP 22 and side	Support documents on participation .



	knowledge sharing visits.					SEforALL thematic areas.	events of SEforALL thematic areas.	
Output 5.4 Support Documentation and outreach services.	SEforALL Outreach for Civil Society organizations.	N/A	Conducted outreach programs.	N/A		1 Civil Society outreach program is organized for province no. 4 and more 3 provincial and 1 national workshop planned for 2017.	1 Civil Society outreach program is organized for province no. 4 and more 3 provincial and 1 national workshop planned for 2017.	Training Report.
	SEforALL Outreach for Private Sector	N/A	Conducted Outreach Program.	N/A		TOR prepared and contracted to conduct 4 provincial and 1 national outreach program for private sector.	TOR prepared and contracted to conduct 4 provincial and 1 national outreach program for private sector.	TOR
	Publish Outreach Materials.	N/A	Publications.	N/A		SEforALL brochure published in Nepali and English language, reprinted RAGA report and finalized edit and layout design works of Country Action Agenda.	SEforALL brochure published in Nepali and English language, reprinted RAGA report and finalized edit and layout	Publications.

							design works Country Action Agenda.	of	
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## 5. BUDGET AND EXPENDITURE

The following table shows the output wise indicative budget and expenditure for 2016 and the sources of funds budgeted and utilization.

Table 6: Output wise annual budget and corresponding expenditure

Amount in US\$

Output	Annual Budget	Annual Expenditure through project	Annual Expenditure through UNDP	Total Expenditure	Budget Utilization%
*Output 1.1	156,450	54,369	57,657	112,026	72%
Output 1.2	6,500	6,408	0	6,408	99%
Output 1.3	10,031	9,925	0	9,925	99%
Output 2a.1	444,000	442,872	0	442,872	100%
Output 2b.1	90,349	87,283	0	87,283	97%
Output 2b.2	4,300	3,311	0	3,311	83%
Output 2b.3	289,620	142,278	128,916	271,194	94%
Output 2b.4	383,200	374,758	0	374,758	98%
Output 3b.1	29,150	18,944	7,645	26,589	91%
Output 3b.2	5,258	5,063	0	5,063	96%
Output 3b.3	10,258	9,737	0	9,737	95%
Output 3b.4	2,500	2,371	0	2,371	95%
Output 3b.5	42,500	36,186	0	36,186	85%
Output 3b.7	16,000	14,578	0	14,578	91%
Output 4.1	14,500	12,835	0	12,835	89%
Output 4.2	14,000	12,776	0	12,776	91%
Program support	289,620	115,921	144,379	260,300	90%
<b>Total</b>	<b>1,808,236</b>	<b>1,349,615</b>	<b>338,597</b>	<b>1,688,212</b>	<b>94%</b>

Not: \*SE4ALL budget and expenditure included in output 1.1

Table 5: Sources of funds Budget and Utilization of the project period

Amount in US\$

Source of Fund	Funding period (Start - End Date)	Total Project Budget	Expenditure up to 2015	Expenditure in 2016	Total expenditure till 2016	Total Budget utilization %	Budget Balance US\$
UNDP	July 2014 - Dec 2019	2,000,000	422,546	296,881	719,427	36%	1,280,573
Donor 1 GEF	July 2014 - Dec 2019	3,000,000	882,682	1,323,923	2,206,605	74%	793,395
Donor 2 Korean	Jan 2015 - June 2016	99,269	99,269	0	99,269	100%	0
Donor 3: Norwegian (SEforALL)	Dec 2015 - Dec 2017	378,000	0	79,215	79,215	21%	298,785
<b>Total</b>		<b>5,477,269</b>	<b>1,404,497</b>	<b>1,700,019</b>	<b>3,104,516</b>		<b>2,372,753</b>

Table 8: M&amp;E Expenditure: In 2016, Project spend on M&amp;E activities

<b>Total spent on Monitoring</b>  Costs associated with UNDP/project staff, consultants, project partners, supporting national statistical systems in designing project specific data collection methodologies (qualitative and quantitative), monitoring methods including stakeholder surveys and other qualitative methods, collection of data, analysis and dissemination of the findings to inform a project, either with project partners or to fulfill specific UNDP/project requirements (preferably the former).	[total spent in USD ] Field visit 25,500 + Staff Cost 39,084 = 64,584
<b>Total spent on Decentralized Evaluations</b>  Costs associated in designing, implementing and disseminating evaluations for specific projects	total spent on commissioning evaluations + total spent on proportional staff] (Data Collection 19,957+Mid term Evaluation 16,000+Training 6,300+Monitoring Framework 7,174 = 49,431
<b>Combined total spent on M&amp;E</b>	[insert total spent in USD] 1,14,015

## Narrative on Progress related to Budget and Expenditure

RERL's total budget for the entire project duration from July 2014 to June 2019 is USD 5,477,269. In 2016 USD 1,808,236 was allocated for different project activities; UNDP's TRAC fund of USD 328,620, GEF fund of USD 1,359,366 and Norwegian fund of USD 120,250 for SEforALL. During this period, USD 1,700,019.76 was utilized, which 94% of the approved budget.

The cumulative expenditure since July 2014 to December 2016 is USD 3,104,516.76, which is 56.68% of the total project budget.

## 6. CROSS CUTTING ISSUES

### 7.1 Targeting and voice/Participation of Target groups

The main target groups of RERL support are people living in off grid areas. All RERL activities are related to promotion of larger renewable energy systems for provision of modern energy in such areas through enabling environment for participation of the private sector in project development. Further, at the operational level, RERL has helped AEPC to prepare GESI sensitive Special Purpose Vehicle (SPV) formation guidelines, which ensures equal participation of women and marginalized groups in decision making of organizations developing renewable energy projects.

RERL supported AEPC to revise RE Subsidy Policy and Delivery Mechanism in 2016. The new policy provides additional financial assistance to vulnerable and disadvantaged groups, remote locations and women headed households.

However, due to the earthquakes of 2015, USD 1 Million was allocated for relief and rehabilitation of renewable energy systems in earthquake affected areas. Women, children and elderly are the most vulnerable to inclement weather in earthquake affected areas. RERL's support mainly focuses on providing electricity through rehabilitation of micro hydro and solar pumping station and institutional solar systems for schools, health posts and public offices. So far RERL has provided assistance to install 59.8 kW of different solar solutions such as mobile phone charging stations and institutional solar for office operation and education.

In 2016, RERL supported to install 111 institutional solar systems in schools, health post and public offices, directly benefitting 88,559 people from services provided by these schools and health posts. Similarly, under rehabilitation activities, RERL provided technical and financial support to 78 MHPs for rehabilitation in 2016 of which 26 MHPs with 662 kW capacity and benefiting 6,617 HHs have been brought back to operation. RERL also carried out detailed assessment of 45 MHPs with total capacity of 1,193 kW in Baglung, Gorkha Okhaldhunga, Solukhumbu, Ramechhap, Sindhuli.

All RERL relief and rehabilitation supports are based on the demand received from District Disaster Reduction Committee (DDRC) and endorsed by DDC.

### 7.3 Gender Equality, Women's Empowerment, and Social Inclusion

Towards achieving the national goal of building an equitable and gender inclusive society by ensuring equal rights to women and men of all castes, creed and regions in the social, political and economic aspects of national development, AEPC is promoting GESI sensitive renewable energy projects and productive end-use applications. In 2016, RERL provided extensive support to AEPC to revise subsidy policy and delivery mechanism, which have both been approved by the government. The new subsidy policy provided additional financial assistance to single women headed and disadvantaged households.

RERL is supporting AEPC to mainstream Gender and Social inclusion (GESI) in RE projects, particularly mini hydro, large micro hydro and solar PV systems. AEPC is supporting women and marginalized communities to benefit from access to electricity by establishing enterprises and income generating activities. In 2016, RERL provided technical assistance to AEPC's Productive Energy Use Component to establish 443 Micro Small and Medium Enterprises (MSME) and 3,151 income generating activities benefiting 14,809 people.

RERL organized **"Business Management Training to Women Entrepreneurs"** 48 women entrepreneurs from Farand Mid-Western Development Regions participated in the training. The main objective of the training was to impart knowledge on business management particularly on entrepreneurship, book keeping and marketing of their products.

RERL is also working on modification/adaptation and field testing of productive use technologies to fit the rural context. These technologies are used in remote locations with marginalized population. In 2016, Lokta Boiler, Sisno Dryer and Khuwa Maker were fabricated/modified and tested. All these technologies help in fuel switching from traditional biomass (firewood) to electricity and thus reduce health hazards especially of women and children.

SEforALL capacity development component under RERL project aims to provide support to National Planning Commission on formulation of SEforALL related documents in stakeholder consultation. Currently, the Country Action Agenda (CAA) document is being finalized which has considered the gender aspects. This is a national document on setting action agenda in realizing the SEforALL objectives. "Energy and women health" nexus is included in the report. Moreover, Ministry of Women, Children and Social Welfare is included in the energy access coordination group which coordinates universal energy access among relevant stakeholders and policy makers.

SEforALL capacity development component under RERL project aims to provide support to National Planning Commission on formulation of SEforALL related documents in stakeholder consultation. Currently, the Country Action Agenda (CAA) document is being finalized which has considered the gender aspects. This is a national document on setting action agenda in realizing the SEforALL objectives. "Energy and women health" nexus is included in the report. Moreover, Ministry of Women, Children and Social Welfare is included in the energy access coordination group which coordinates universal energy access among relevant stakeholders and policy makers.

## 7.4 National Capacity Development

RERL/AEPC and NAST carried out Capacity Need Assessment of the Renewable Energy Sector with the financial assistance of the World Bank. The assessment looks at capacity gaps among all stakeholders at all levels including the government and the private sector.

RERL is working mainly on capacity development of AEPC. RERL professionals work closely with AEPC counterparts and help develop plans, implementation modalities and implementation management of their respective components. The project has been supporting AEPC to promote less disseminated yet highly feasible renewable energy technologies like mini hydro, large micro hydro and large scale solar PV and productive energyuses. One of the major RERL support for AEPC in 2016 has been the revision of RE subsidy policy and subsidy delivery mechanism; which was endorsed by the cabinet in 17 May 2016. The new subsidy policy opens way for private sector participation. Further, this policy creates an opportunity for subsidizing services instead of only equipment, which is expected to lead towards greater efficiency and sustainability. RERL also supported AEPC to update Power Output Verification (POV) Guideline. Based on the updated guideline 25 Independent POV Inspectors were trained. RERL is directly working with AEPC and its projects to promote mini hydro in Nepal. Further, RERL has provided technical assistance in project selection, detailed feasibility study, credit financing and achieving financial closure, etc.

Besides AEPC, RERL is also working with relevant governmental agencies to promote less disseminated RE technologies like mini hydro and large solar PV. In 2016, RERL provided a week-long training on developing large scale solar PV systems for grid interconnection to 26 engineers including 2 women from Department of Electricity Development (DoED). Similarly, the project provided technical assistance to Nepal Electricity Authority to prepare technical specifications and bid document for procurement of 64 MW grid-connected solar PV systems to be installed at different locations around the country.

This is essentially a National Capacity Development project aimed to provide required capacity at NPC and relevant government stakeholder to implement and realize SEforALL objective in national development agenda. It targets to enhance multi-stakeholder efforts to bring in synergy in their activities to achieve the common goal. Energy has been the core to the development efforts of Nepal and the government has expressed its commitment for this initiative as well as SDG7.

The project provided orientation and capacity development training to NPC and other government staffs on SEforALL implementation process as well as on overall energy development aspects. Similarly, the entire process of country action agenda was led by NPC. Through NPC, the action agenda was sent to more than 60 government, private sector and civil society organizations to receive feedback and comments on the draft document. Similarly, the newly appointed NPC team including Hon VC and members were provided the overview and activities of NPC. The project provided support to Alternative Energy Promotion Centre (AEPC) Executive Director (ED) and NPD of the program in participating to COP 22 held in Marakesh, Morocco and knowledge sharing in the side events of SEforALL thematic areas.

## 7.2 Sustainability

The project is strengthening legal, institutional and policy environment to support renewable energy and other low-carbon technology development and utilization through formulation of policy, planning and information dissemination that would create an enabling environment especially for promotion of mini hydro and solar mini grid systems. In terms of enhancing renewable energy financing, RERL is working closely with Central Renewable Energy Fund (CREF) to establish different financial instruments to attract private investment in larger RE projects. The project is aligned with AEPC's mandate, objective and activities. A detailed study on reluctance of BFI to invest in RE in general and rural areas for access to electricity. The study recommends various instruments including establishment of SPV under the Public Private Partnership (PPP) model involving the private sector, local government and community organizations for building, operating and managing demonstration projects. Financial Instruments such as soft credit, credit guarantee, vendor financing, project insurance, etc. are also recommended by the study. RERL initiated establishment of vendor financing mechanism at a small scale for promotion of

household size solar irrigation. RERL is jointly working with UNCDF to prepare Vendor Financing Manual, which will help pave the way for scaling up. To make sure that CREF is fully operational, RERL and UNCDF are supporting to prepare its business plan spelling out its area of operation and resources required. It is envisaged that these activities will support to remove existing barriers to project financing from the private sector and also inject more credit into projects thus moving from a subsidy driven RE promotion to a more market driven approach ensuring financial sustainability of the promoted systems which ultimately enhance the livelihood opportunities and options for the local communities. The project will ensure that a number of micro, small and medium enterprises (MSME) are functional in the RE project areas and consume substantial amount of electricity which also contributes to financial sustainability of RE projects with affirmative interventions to promote women's organizations and women-led business to have access to finance for operating MSME. To develop the capacity within the country for larger solar PV and mini hydropower projects, RERL is supporting private companies, consultants, engineers and technicians. Skill trainings follow guidelines to ensure at least 33% participation from women, marginalized and vulnerable communities. So far, altogether 93 engineers of which 8 women were trained on large scale Solar PV for grid connection, Power Output Verification of mini/micro hydro, MHP Operation and management and RE Financing.

The project is working closely with NPC designated focal point. The document prepared by the project will help to provide guidance for NPC for regular follow up and monitoring of efforts from government and other multi-stakeholders in achieving the objectives of this initiative.

### 7.3 South-South and Triangular Cooperation

State Council of Science, Technology and Environment (SCSTE) Meghalaya has invited expert from AEPC/RERL to provide input in their planning of "Meghalaya Basin Development (MBD) Project". Mr. Jiwan Kumar Mallik, Solar Expert has shared Nepal's off-grid experiences and lesson learnt. The rural electrification models adopted in Nepal were presented in the workshop. The 60+ participants were represented from private sector, I/NGO, Meghalaya and Arunachal Government Officials, Media and academic institute. The Arunachal Government Official has impressed with the Nepal's innovative models on rural electrification and he was talking that Arunachal Government will be also seeking support from AEPC/RERL. The AEPC/RERL also provided support to pilot an off-grid project. The site identification for piloting the off-grid micro hydro has been jointly carried out by MBD and international speakers in the workshop. There were more than 10 young engineers trained during the field visit. The South-South Cooperation between RERL and SCSTE help to share the long experiences gained by RERL in the sector. It is expected that SCSTE will disseminate the off-grid technology in the state of Meghalaya for the benefit of the people.

### 7.4 Partnerships

**The World Bank:** Alternative Energy Promotion Centre (AEPC) is implementing the World Bank funded Renewable Energy Component of Kabeli Transmission Project in Taplejung. RERL is supporting AEPC to undertake all the activities under this programme. RERL is providing technical assistance to install a 900 kW mini grid project interconnecting 8 MHP. The mini grid, once completed will provide electricity to the district headquarters and over 2000 households that will directly benefit from reliable supply.

**UNESCAP:** Under Pro-Poor Public Private Partnership (5p) Modality, 18 kW Baidi Solar Micro Grid has been installed in Dubung, Tanahun benefiting 140 household. This project is the first one in Nepal developed by a SPV owned by beneficiary community and a private company. RERL helped the SPV to prepare business plans of 20 enterprise. RERL is also supporting AEPC to promote Solar PV based water supply systems in Raksirang VDC of Makawanpur district under 5P project by leveraging UNESCAP financial assistance.

**UNEP/Practical Action Consulting Ltd.:** With technical assistance from AEPC/RERL and financial assistance from UNEP, Practical Action Consulting Ltd. carried out a case study of mini/small hydropower



(both off- and on-grid) in Nepal to support AEPC in formulating policies and implementation framework to promote mini hydro projects in Nepal. The case study documents and shares experiences of different business models for both 'on and off-grid' mini hydro development; and explored various enablers and stakeholder roles to create an enabling environment.

**UNDP/Norway:** RERL is assisting UNDP to implement SE4ALL activities in Nepal. Government of Norway has provided financial assistance to carry out different activities under SE4ALL. So far, Country Action Plan has been prepared and shared with different stakeholders.

**UNCDF:** RERL and Clean Start of UNCDF in collaboration have been supporting CREF to prepare its Business Plan that will help to chart the way forward. Likewise, RERL and UNCDF are preparing Vendor Financing Manual to promote small RE systems through private sector involvement.

**Global Facilitation Team (GFT):** The Country action agenda was shared with the SEforALL Global Facilitation Team (GFT) to obtain feedback on the document with its quality circle members. The technical team is collaborating with the global team and regional hub on possible collaborations.

## 7.5 Promotion of civic engagement

At the field level, RERL works directly with the beneficiaries following the much acclaimed REDP's Community empowerment model - where community is provided handholding support to build their capacity and to engage in all aspects of service delivery ranging from project identification, planning, implementation, management, operation and monitoring. In 2016, RERL worked with extremely marginalized Chepang community in Dhading district to support them with access electricity from solar PV systems. The financial assistance was leveraged from Gyeongsangbuk-do Provincial Government, South Korea to undertake this task jointly by UNDP/RERL team. Likewise, RERL is currently working with Chepang community in Makwanpur district to install solar pumping systems under the Public Private Partnership modality with financial assistance of International Fund for Agricultural Development (IFAD)/ United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).

## 7.6 Expanding opportunities for youth

Access to electricity in rural areas brings opportunities for establishment of various enterprises. RERL is supporting PEUC of AEPC to promote end use activities, which attract young men and women. In some places, energy access in villages have attracted young men who had been working abroad to retain them in country and to start their own business. Poultry, carpentry, metal shop, bakery, communication centers and agro processing mills are the most popular enterprises in rural areas.

RERL in collaboration with ICIMOD supported Young Innovations Pvt. Ltd. to organize "International Space Apps Challenges 2016". The objective of this event was to bring together young and creative minds to find innovative solution to different challenges. Beside 26 global challenges, there were six local challenges that were provided by AEPC/RERL and ICIMOD, which encouraged the youth to assist in solving real problems faced in Nepal. Altogether 63 young people including 10 women participated in the challenge and produced 16 innovations, including 3 applications related to renewable energy. RERL is supporting two of these innovations, i) GPS based Survey Tool for mini grid (micro hydro and solar), and ii) calculation of area for rooftop solar PV installation in a cluster for further development.

RERL is providing internship opportunities to young professional to be involved in renewable energy related activities. In 2016, two women – one Nepali and one foreigner – were engaged as interns who contributed in solar PV related assignments.

## 7.7 Innovation

RERL has been at the forefront in innovating technologies as well as approaches for promotion of renewable energy in Nepal. RERL support AEPC to remove barriers for promotion of large scale RE systems such as mini hydro and large solar PV projects. RERL is also supporting AEPC for sustainable operation of micro hydropower projects. In this regard, RERL has come up with the concept of 'Renewable Energy for Enterprise Promotion and Renewable Energy Promotion as an Enterprise'. The main concept is to look at RE projects not only as social infrastructures but also as profit making assets. RERL is piloting MHP as an enterprise concept in several MHPs by strengthening the institutional capacities, exploring opportunities for optimum utilization of electricity and building positive incentives in management processes.

RERL is also working on adaptation/modification of technologies to fit the rural context. These productive end use technologies help fuel switching from traditional biomass to electricity. RERL is also supporting field testing of these technologies, sharing information and working with stakeholders for wider dissemination.

To promote use of information and communication technologies (ICT) in all aspects of renewable energy development, RERL has been working with young innovators in Nepal to develop mobile phone applications. RERL developed both Android and iOS based Nepal Solar Calculator that allows calculation of solar power required and information on costs, subsidy and nearest vendors. In 2016, in collaboration with International Centre for Mountain Development (ICIMOD) supported to develop of smart phone applications for field survey of mini grid projects (micro hydro and solar), calculation of area for rooftop solar PV installation and remote monitoring of solar PV systems. RERL further supported development of applications for field survey and calculation of rooftop solar PV installation. These application will be used in project identification and prefeasibility studies.

## 7.8 Knowledge Management and Products

- Renewable Energy Subsidy Policy 2016
- Renewable Energy Subsidy Delivery Mechanism 2016
- Methodology for District Electrification Master Plan
- Renewable Energy Survey Tool (REST)
- Roof Top Solar PV Estimator (RSPE)
- Revised Power Output Verification (POV) Guideline
- Rapid Assessment of Gap Analysis Report
- Country Action Agenda Final Document (ready to be presented to high level mechanism for approval)
- SEforAll Brochure in English and Nepali

## 7. LESSONS LEARNED

As private developers have very limited space to work in the small scale renewable energy systems promotion in Nepal, there is lack of knowledge and experience both on the part of the government and the private sector in opportunities available for their profitable participation. As a pilot, two projects were completed by AEPC recently, in which, private companies partnered with rural communities to establish Special Purpose Vehicle and develop solar mini grids – in Tanahun and Khotang. These systems connect 223 communities with electricity. Further, RERL partnered with Winrock International to promote household size solar irrigation systems in Chitwan district. All these experiences indicate that there are entrepreneurs willing to invest if the investment climate is enabling and favorable. Private sector is attracted to technologies and systems that have return on investment and are scalable. To encourage private investment, projects have to be carefully selected, financing arrangements have to be

properly designed and bureaucratic redtapism need to be reduced. There is ample evidence that some private companies are willing to take reasonable risks to promote their technologies.

Frequent changes in NPC and its secretariat staff has affected the work progress of SEforALL. Assignment of designated focal person for SEforALL would help alleviate the situation.

## 8. IMPLEMENTATION ISSUES AND CHALLENGES

- **Reluctance of BFIs in providing credit:** Banks and Financing Institutions (BFIs) in Nepal are risk averse and do not want to invest in renewable energy systems in rural areas, particularly community owned and managed ones. RERL carried out a study to identify reasons for their risk averseness. The study recommends several financial instruments to attract BFI in rural energy investment. RERL is working with CREF to develop and establish financing instruments such as soft credit, credit guarantee, vendor financing, project insurance, etc. to attract BFI's investment in renewable energy systems in rural areas.
- **Delay in approval of subsidy and delivery mechanism:** Revision of RE Subsidy Policy took a lot more time than expected due to frequent changes in government. This delay has affected financial closure of RERL supported projects and thus implementation. As the government has recently approved both the policy and its delivery mechanism, it is expected that project implementation in 2017 will be faster than in 2016.
- **CREF not fully operational:** To attract private investment and achieve on time financial closure of larger projects like mini hydro, credit facility is necessary. Lack of availability of credit fund with CREF has also hampered on time financial closure. AEPC is forwarding credit facility to CREF from ADB funded SASEC to promote mini hydro and solar mini grids. This will help in achieving financial closure of RERL supported projects too.
- **Adoption of PEU in RE Projects:** Reliability and quality electricity supply is one of the major reasons for reluctance of rural entrepreneurs to invest in productive energy use enterprises in RE projects. Further, lack of professional management of community owned RE systems and limited market in rural areas for local products are also cited as reasons for low investment. RERL is working with PEUC of AEPC to realize the concept of 'energy for enterprise and energy as an enterprise'. The 83 kW Darna MHP, Achham is being supported to operate as an enterprise. Darna MHP will export power to neighboring Kala Gaun VDC which does not have resources of its own to produce electricity. It is expected that with extensive support for awareness, capacity enhancement and transparent governance, most of the MHPs supported by AEPC could be encouraged towards commercial operation.
- **SEforAll:** SEforALL project personnel have not been able to physically sit near NPC designated staff as there is no office space available due to severe damage to the NPC Secretariat building in 2015. After the earthquake, the priority of NPC shifted towards recovery and reconstruction and affected SEforALL activities. Similarly, frequent changes in leadership of NPC and alterations in responsibilities of officials has affected implementation of SEforALL capacity building project activities. In spite of the challenge, draft Country Action Agenda has been prepared and shared with stakeholders.

## 9. PRIORITIES FOR 2017

1. As decided by AEPC, RERL will start working on RE Policy in 2017. AEPC had clearly indicated that approval of RE Subsidy Policy and Delivery Mechanism needs to be completed before activities related finalization of RE Policy document. RERL will work with DDCs to prepare District Electrification Master Plan of 7 districts.
2. RERL will continue working with AEPC and NEA for grid connection of MHPs. AEPC has already allocate fund for grid connection of 2 MHPs, which will be carried out in early 2017.
3. RERL will work with CREF to help 7 mini hydropower projects to achieve financial closure and start construction work in 2017. Financial resources will be mobilized from AEPC and SASEC for subsidy and credit.
4. Support will be provided to CREF to scale up innovative financing mechanisms/instruments such as credit guarantee, soft credit, vendor financing, Local Financial Institution (LFI) financing and insurance to attract BFIs to invest in RE projects. As solar irrigation has potential for private investment, more such projects will be promoted through vendor financing and LFI financing mechanisms.
5. RE as an Enterprise will be supported in 15 MHPs both in EQ affected areas and large MHP (>60 kW) in the coming year.
6. RERL will continue to support technology adaptation for fuel switching from traditional biomass or fossil fuel to electricity.
7. Under SEforALL, the Country Action Agendawill be finalized and published and the Investment Prospectus will be prepared. Likewise, institutionalization in NPC and capacity building activities will be carried out at provincial and national levels.

## 10. A SPECIFIC STORY

In the summer of 2007, a massive landslide tore through the hamlet of Chane in Ghandruk village, Kaski district in western Nepal. It was caused by heavy rains that had pounded the hillside settlements in August that year.

Although the landslide occurred at around 9 pm, dozens of villagers managed to flee to safer places. The next morning, they found that cracks had appeared in their farms. Altogether more than 30 people from six households were displaced by the landslide. Its debris and mud flowed for several years, forcing the villagers to build a temporary trail down the site.

The family of Santosh Gurung--his wife Shanta Maya Gurung and his elderly parents--was among those displaced by the natural disaster. They fled their homes and lived in rented rooms for several years. Now, trees have grown there, and people walk oblivious to the disaster, giving some degree of assurance for hundreds of trekkers who walk through the rocky mountain trail. But signs of devastation still remain in the form of boulders brought by the landslide.

Life for Shanta Maya and her family of five, who eked out their living as subsistence farmers, became harder. A year after the landslide, she sought employment abroad. In 2008, Shanta Maya moved to Hong Kong to work as a migrant worker. She hopped from one odd job to another: dishwasher, babysitter and domestic help. She earned between 30,000 rupees and 50,000 rupees a month.

But being far away from her 8-year old son and cleaning the tables of Chinese restaurant at the 20<sup>th</sup> floor of the skyscraper wasn't the kind of life she had ever dreamed of. So in 2011, she returned home for good. The big question that lingered was: Will she again work the field, growing millet and maize, and be content with harvesting the meager yield?

Only few yards down her two-storied mud and stone house, hundreds of trekkers passed through the mountain trail.

The village had already been electrified by Chane Khola Micro Hydro Power, which came into operation in 2011. While the people's basic power needs were met by the 30 kilowatt plant, its potential for supporting livelihood was yet to be explored.

Since July 2014, the Alternative Energy Promotion Centre (AEPCC) has been actively supporting productive energy use by providing financial assistance to small businesses for marginalized and disadvantaged communities across the country.

In March, 2015, the AEPCC carried out business opportunity assessment in Ghandruk. A meeting of the users' committee for the Chane Khola Micro Hydro Power (MHP) was called in Ghandruk, where roughly 50 people participated. That day, Shanta Maya proposed to open a bakery targeting the eateries serving breakfast to trekkers. Shanta Maya had seen the German Bakery, which was higher up in the small town with tea houses, had been doing brisk business.

Once her idea for investment received a green signal, Shanta Maya's husband, Santosh, who used to drive a taxi in the road connecting the village with Pokhara, quit it to support his wife. The AEPCC provided a subsidy of 69,480 rupees for the purchase of equipment. The Gurung couple invested more than 300,000 rupees on the equipment as well as constructing a corrugated tin roofed hut along the trail.

They named their enterprise after their only child: a 13-year-old son, Sanjog. The Sanjog Bakery is perched on a steep hill on the trekking trail. On a recent afternoon, Shanta Maya and Santosh descended the steep trail from their home and arrived at the shop as the Chane Khola, swollen with monsoon rains, raced by in a rush to meet the Modi Khola, the region's biggest river.

"I never thought that I would set up this business here along the trail. But now we have come to realize how important the decision this was. And, it is helping us pay our bills; we now fully rely on it," she says adding that the business is helping her pay a monthly fee of 15,000 rupees for her son who studies in an English medium school in Pokhara.

An odd trekker might buy a cake or bread from the shop, but most of her customers include tea houses and restaurants along the trail. In peak season—during autumn and spring seasons when trekkers arrive to take advantage of mild weather—she makes up to 5,000 rupees a day.

Every week, her husband, Santosh, buys the ingredients—he flour, milk powder, egg, sugar, flavors and colors and yeasts from Pokhara. During the day, when the load for the micro hydropower plant is less, Shanta Maya pours the flour into the mixer. She adds condiments and ingredients and pours water into it. The mixer turns the flour into dough. In the meantime, she turns on the oven and applies oil to the surface of a tray. She slices the dough, making small balls and kneading them. She transfers these balls to the tray and places it inside the oven.

Since she opened the bakery, Shanta Maya has received a number training, which has empowered her to run the business. She attended a week-long training in Pokhara on bakery organized by the AEPCC. She honed her production skills through a 10-day training in Kushma, the headquarters of neighboring district of Parbat.

Still, she feels there's more to be done. "I want to learn more about this. I want to make dry cakes so that it will not go waste soon," she says. Even local people, not used to having fresh bakery items, are turning out as customers. Her neighbors' children carry cakes and bun breads for their midday meal at school, she says.

As the business grew, the Gurung couple's ambition too soared. Santosh says they want to buy a machine (which costs 1 lakh rupees) that slices bread. If they buy it, he reckons, Shanta Maya wouldn't have to juggle too many things in her tiny kitchen. "The machine will lessen her burden," says Santosh, who supports his wife in the production.

There are other plans. A road which slices through their farm land has been under construction for the last two years. Once it is completed, the couple wants to build a building so that they have bigger space

to produce bakery. “I earned good money when I drove the taxi, but it was very stressful. I had to wait for several hours for passengers. The vehicle needed constant repairs,” says Santosh. “Above all these, I was away from my family most of the time. Now, I can help my wife and we get to spend a lot of time together. This is really good.”

## 11. RISK AND ISSUE LOGS

Table 9: Risk and Issue Log Matrix

S.N	Description	Category (financial, political, operational, organizational, environmental, regulatory, security, strategic, other)	Likelihood of risk (scale of 1 to 5 with 5 being the most likely) <b>A</b>	Impact (scale of 1 to 5 with 5 being the highest impact) <b>B</b>	Risk factor (A x B)	Mitigation measures if risk occurs	Date risk is Identified	Last Updated	Status
	Delay in approval of RE subsidy Policy and Act (As the developers and communities are waiting for subsidy policy before financial closure, there is likelihood of delays in demonstration project implementation)	Political and Regulatory	3	5	15	RERL has supported AEPC to prepare draft of Renewable Energy Policy. Stakeholder meeting was organized to get GON and DP comments. The Policy has to be approved by the Cabinet before it can be implemented.	October 2015	December 2015	Approved by GON
	Frequent changes in NPC office bearers.	Political	4	4	16	Work closely with the designated focal point and provide briefing to the team immediately after appointment and receive guidance.			•
	Changes in government	Strategic	3	3	6	The government keeps on changing its energy priority and targets,			•



	priority and policy					The mitigation measure includes updating the document as soon it is changed.			
	CREF not fully operational – lack of availability of credit fund  Reluctance of BFIs in providing credit	Financial	5	5	25	<ul style="list-style-type: none"> <li>Continuously supporting CREF for strengthening institutional capacity &amp; financial and technical assistance</li> <li>Working closely with other AEPC managed projects – SASEC, Kabeli for resource mobilization</li> </ul>	14 October		• Delay in financial closure of mini hydro projects
	Adoption of PEU in enterprise development	Operational	3	3	9	<ul style="list-style-type: none"> <li>Working closely with PEUC to develop and implement modalities to promote PEU activities</li> <li>Innovation in fuel switching</li> <li>Initiation to establish credit mechanism for PEU with CREF</li> </ul>			• RE projects are not financially attractive
	NRREP exit	Operational	3	3	9	<ul style="list-style-type: none"> <li>Working closely with other AEPC managed projects – SASEC, Kabeli for resource mobilization</li> <li>AEPC in discussion with DFID and other donors</li> <li>Subsidy mobilized from govt. funds</li> </ul>			<ul style="list-style-type: none"> <li>Resource mobilization from different sources</li> <li>Delay in activities</li> </ul>

	Programmatic	Nov 2016	NPC informed on change in portfolio of the designated focal point and has not provided the details of new focal point. Hence the outreach program has been halted for some time.	Continue discussion with NPC on assigning new focal point.	Existing, but position discussions.	Dec 2016			•
	Reluctance of BFIs in providing credit	Financial	3	5	15	<ul style="list-style-type: none"> <li>• Identify risks perceived by BFIs</li> <li>• Development of innovative financial instruments</li> <li>• Exposure/orientation of BFIs on RE</li> </ul>			<ul style="list-style-type: none"> <li>• Financial closure &amp; private sector investment into RE is very challenging</li> </ul>

Table 10: Issue Log Matrix

S.N	Type	Date Identified	Description and Comments	Resolution measures recommended	Status of the issue	Status Change Date
1	Programmatic	Nov 2016	NPC informed on change in portfolio of the designated focal point and has not provided the details of new focal point. Hence the outreach program has been halted for some time.	Continue discussion with NPC on assigning new focal point.	Existing, but position discussions.	Dec 2016
2	Programmatic	Nov 2016	The proposal obtained for one of the study did not have qualified consultant and needs to be re-advertised.	The TOR was revised and new study to be conducted together with APEC/RERL including the scope of works included in the previous TOR.	Not ToR is prepared and ready to be announced.	Dec 2106

## 12. PROGRESS AGAINST ANNUAL WORK PLAN 2016

UNDAF Outcome 2: Vulnerable groups have improved access to economic opportunities and adequate social protection

UNDAF Output 2.4: Vulnerable groups have improved access to sustainable productive assets and environmental services

UNDP/CPAP Output 2.4.1: Alternative Energy Promotion Centre's capacity enhance for scaling up energy services in rural areas

EXPECTED OUTPUTS	PLANNED ACTIVITIES	Targets for Planned Activities	Annual achievements of Targets	Annual achievements of Targets in %	Donor Name	Approved budget (from the AWP)	Amount spend	% of expenditure against the approved budget	Remarks if target not fully achieved
<b>Activity Result 1:</b> Strengthened legal, institutional, policy, planning, and information environment ensures increased RE investment and utilization	Activity 1.1.1 Support preparation and adoption of policy that enables PPP model for mini-hydro, micro-hydro mini-grid, and large-scale PV development, thus attracting the private sector to such projects	Institution Arrangement in Federal structure	• Study on Institutional Arrangement of Federal Structure completed	100%	GEF	4,700	4,562	97%	
<b>Annual Targets:</b> Comprehensive Renewable Energy Policy Formulated			• Consultation workshop completed	100%	GEF	2,900	2,865	99%	

	Activity 1.1.2 Support preparation and adoption of policy for future grid connection of off-grid mini-hydro, micro-hydro mini-grid, and large-scale solar PV systems	Recommendations for Policy for Grid Connection of Renewable Energy TA for prepare technical specifications and bid document Workshop on Grid Connection of RE technology	<ul style="list-style-type: none"> <li>Joint meeting between AEPC and NEA conducted</li> <li>Work on net metering standard initiated</li> <li>TA to NEA to prepare technical specification and bid document for procurement of 64 MW grid connected Solar PV</li> <li>Workshop organized</li> </ul>	100%	GEF	2,100	1,596	76%	
	Activity 1.2.1: Prepare methodology for integrating mini hydro projects and large scale solar PV system into district energy plans.	Orientation on methodology to prepare District Electrification Master Plan	<ul style="list-style-type: none"> <li>Orientation for 18 DDCs engineers organized</li> </ul>	100%	GEF	6,500	6408	99%	
	Activity 1.3.3 Completed training and awareness programs for relevant government agencies and stakeholders on mini hydro and large scale solar PV system	Training on Large Solar PV Systems	<ul style="list-style-type: none"> <li>Training 28 DoED engineers organized</li> </ul>	100%	GEF	2,950	2850	97%	
		Exhibition of RETs to address energy crisis	<ul style="list-style-type: none"> <li>RE exhibition organized</li> </ul>	100%	GEF	7,081	7,075	100%	
<b>Sub Total Activity Result 1</b>						<b>26,231</b>	<b>25,356</b>		
<b>Activity Result 2: Increased investments in RE</b>	Activity2a.1.1 Provide financial support to the demonstration mini-hydro projects, as per government policy, through the CREF	Initiate financial closure of 1 MHP	<ul style="list-style-type: none"> <li>USD 400,000 provided to CREF to support mini hydro</li> <li>Financial closure of Simrutu Khola initiated</li> </ul>	100%	GEF	400,000	400,000	100%	
<b>Annual Targets:</b> support NRREP to initiate 1 MW mini hydro projects	Activity 2a.3.1: Provide financial support to the demonstration Large-scale solar PV projects, as per government policy, through the CREF	Fund transfer to CREF for solar pumping	<ul style="list-style-type: none"> <li>USD 30,000 provided to CREF to support solar pumping</li> <li>36 small scale solar irrigation installed in Chitwan</li> </ul>	100%	GEF	30,000	30,000	100%	
<b>Sub Total Activity Result 2a</b>						<b>482,462</b>	<b>480,712</b>		

	Activity 2b.1.1: Update the feasibility study of the selected Mini-hydro demonstration projects to make it bankable	Various studies of mini hydro projects	<ul style="list-style-type: none"> <li>• Transmission Line &amp; Environment Assessment of Giri Khola</li> <li>• Environment Assessment of Simrutu Khola</li> <li>• Detailed Feasibility of Namche Khola</li> <li>• Environment Assessment of Manjo Khola</li> <li>• Environment Assessment of Bom Khola</li> <li>• Prefeasibility of Lumding Khola</li> <li>• Transmission Line &amp; Environment Assessment of Phawa Khola</li> </ul>	100%	GEF	16,200	15,460	95%	
	Activity 2b.1.2: Activity 2b.1.2 : Support to establish and strengthen suitable institutional arrangement for development and management of mini hydro projects including SPV model	Support to establish Special Purpose Vehicle (SPV)	<ul style="list-style-type: none"> <li>• SPV of Juddi Khola, Simrutu Khola, Bom Khola and Phawa Khola initiated</li> </ul>	100%	GEF	12,700	11,923	94%	
	Activity 2b.2.2: Provide technical assistance for construction of the project	Technical Assistance for Taplejung Mini Grid	<ul style="list-style-type: none"> <li>• Assisted to prepare bid document for 11kv transmission line</li> <li>• Assisted to prepare Vulnerable Community Development Plan and Environment Assessment</li> </ul>	100%	GEF	4,000	3,311	83%	
	Activity 2b.3.1 Preparation of a shortlist of potential project sites selected based on a set of criteria and select sites in consultation with relevant stakeholders	Study on shortlist of potential project sites	<ul style="list-style-type: none"> <li>• Geo Coded Map of Energy Infrastructure, including micro hydro, solar &amp; national grid completed</li> </ul>	100%	GEF	5,500	5,269	96%	
	Activity 2b.3.2 Conduct detailed feasibility study of selected demonstration projects	Detailed Feasibility Study conducted of selected Solar PV demonstration projects	<ul style="list-style-type: none"> <li>• Detailed Feasibility study of 100 kW solar PV system for grid connection at Rairang Mini Hydro at Dhading completed</li> </ul>	100%	GEF	25,000	24,093	96%	

		Study on Market Assessment of urban roof top solar potential	<ul style="list-style-type: none"><li>• Roof top solar PV system assessment completed</li></ul>	100%	GEF	7,500	7,006	93%	
		Mobile application for Nepal	<ul style="list-style-type: none"><li>• Android based Nepal Solar Calculator developed</li></ul>	100%	GEF	2,000	1,886	94%	
		Develop Software for survey of mini grids	<ul style="list-style-type: none"><li>• Smart phone applications for field survey of mini grid developed</li></ul>	100%	GEF	8,000	7,828	98%	
	Activity 2b.3.3 Support establishment of suitable institutional arrangement for development and management of large solar PV projects including SPV model	SPV formation	<ul style="list-style-type: none"><li>• SPV formation of Telkuwa, Bara and Chitwan completed</li></ul>	100%	GEF	600	364	61%	
	Activity 2b.3.7: Provide technical assistance for installation of the project	Pilot solar PV pumping projects	<ul style="list-style-type: none"><li>• Piloted household size irrigation at Chitwan</li></ul>	100%	GEF/U NDP	31,500	26,623	85%	
		Pilot E4E in 2 schools	<ul style="list-style-type: none"><li>• Support E4E package for Shree Dipnarayan Adarsh Higher Secondary School in Parsha</li></ul>	100%	GEF	4,000	3,984	100%	
	Support for Earthquake relief and rehabilitation								
	Mobile Charging	28 Mobile Chrging Stations at EQ affected areas	<ul style="list-style-type: none"><li>• 28 Mobile Charging Station installed in Dolakha</li></ul>	100%	GEF	521	521	100%	
	Monitoring and supervision of installed solar solutions for public institutions	11 DDCs	<ul style="list-style-type: none"><li>• Field verification completed</li></ul>	100%	GEF	2,000	881	44%	
	Solar solution for public institutions (VDC, health post, schools, communication, PVPS)	83 systems	<ul style="list-style-type: none"><li>• 7 Solar PVPS in Dhading, Dolakha, Sidhuli, Ramechhap and Okhaldhunga</li><li>• Solar solution installed in EQ affected sites</li></ul>	100%	GEF	178,000	166,900	94%	
	Activity 2b.4.1 Assist NRREP to implement the projects	Study on Energy ConsumptionPatt ern	<ul style="list-style-type: none"><li>• An analysis of energy consumption patterns of 15 MHPs completed</li></ul>	100%	GEF	1,900	1,738	91%	
	EQ Relief and Rehab Micro Hydro								
	Rapid assessment of micro hydro damaged by earthquake	Detailed Assessment of EQ affected micro	<ul style="list-style-type: none"><li>• Detailed assessment of 45 MHPs completed</li></ul>	100%	GEF	14,300	11,181	78%	

		hydropower plant							
	Repair and maintenance of micro hydro damaged by earthquake	78 MHPs	<ul style="list-style-type: none"> <li>Rehabilitation work of 26 MHPs completed</li> </ul>	100%	GEF	348,000	347,453	100%	
	Commercial operation of micro hydro damaged by earthquake	Preliminary assessment of 16 MHPs of Baglung and Dolakha	<ul style="list-style-type: none"> <li>Detailed Assessment of 10 EQ affected MHPs to support commercial operation completed</li> <li>Workshop on preparation of business plan of MHP organized</li> </ul>	100%	GEF	19,000	14,385	76%	
	Incollaboration with UNCDF support CREF in preparing RE Business plan	1 Business plan for CREF	<ul style="list-style-type: none"> <li>Business plan for CREF completed</li> </ul>	100%	GEF	5,000	3,822	77%	
	In collaboration with UNCDF, Support CEREF to develop RET vendor financing manual and training documents	1 vendor financing manual for CREF	<ul style="list-style-type: none"> <li>1 Vendor Financing Manual for small scale RE systems developed</li> </ul>	100%	GEF	5,150	3,941	77%	
<b>Sub Total Activity Result 2b</b>						<b>391,450</b>	<b>380,782</b>		
<b>Activity Result 3:</b> Improved design and packaging of investment support mechanism for rural RE and other low carbon technology applications	Activity 3b.2.1 Design of the commercial financing instruments for Mini-hydro and Large-scale solar PV projects and select fund administrator	Study on Design of Commercial Financing Instruments for mini hydro and large solar PV	<ul style="list-style-type: none"> <li>A comprehensive report on Design of Commercial Financing Instrument completed</li> </ul>	100%	GEF	5,258	5,063	96%	
<b>Annual Targets:</b> Supported CREF to design financial instruments for financing RE projects	Activity 3b.3.1 Design training materials for bankers to understand challenges and opportunities in Mini-hydro and Large-scale solar PV projects	Design training materials for banks on mini hydro and large solar PV	<ul style="list-style-type: none"> <li>Training materials for banks on mini hydro and large solar PV developed</li> </ul>	100%	GEF	4,758	4,578	96%	
	Activity 3b.3.2 Support CREF banks for exposure on mini-hydro and large-scale solar PV projects	Exposer visits for Bankers	<ul style="list-style-type: none"> <li>Partner Banks visited at Simrutu Khola mini hydro</li> </ul>	100%	GEF	1,500	1,275	85%	
	Activity 3b.3.4 Support project developers to prepare bankable business plans and other loan documents for mini-hydro and large scale solar PV projects and present them at	Business plan prepared	<ul style="list-style-type: none"> <li>Business plan of Junbesi Khola, Solukhumbu and Simrutu Khola, Rukum</li> </ul>	100%	GEF	4,300	3,884	90%	



	bank for financial closure								
	Activity 3b.4.1: Organize appropriate events to bring together Mini-hydro developers and Large-scale solar PV Projects, equity investors, and potential lenders	Organize events to bring together Mini-hydro developers and Large-scale solar PV Projects, equity investors, and potential lenders	<ul style="list-style-type: none"> <li>The Investors Forum organized</li> </ul>	100%	GEF	2,500	2,371	95%	
	Activity 3b.5.1 Prepare guidelines for identifying and assessing existing and potential enterprises	Support to prepare a model to promote cluster of enterprises in mini /large micro hydro catchment area	<ul style="list-style-type: none"> <li>Supported beneficiaries of Darna MHP, Achham to run their MHP as an enterprise</li> <li>Orientation on MHP as an enterprise model conducted</li> <li>Quick assessment of 30 MHPs conducted</li> </ul>	100%	UNDP	23,500	19,638	84%	
	Activity 3b.5.2 Support 1 SPV in preparing business plan & establishment of productive end use	Strengthen capacity of MHFG/ LEDC to identify potential enterprises	<ul style="list-style-type: none"> <li>Business Opportunity Assessment</li> </ul>	100%	UNDP	5,000	4,655	93%	
		1 Sub sector	<ul style="list-style-type: none"> <li>Training on Lokta Sub Sector in Ghandruk</li> </ul>	100%	UNDP	5,000	4,997	100%	
	Activity 3b.5.4 Support existing entrepreneurs for switching to electric energy	Explore and design innovative technology for the promotion of PEU, particularly focusing on women and DAG appropriate technologies and provide technical assistance	<ul style="list-style-type: none"> <li>5 Lokta boiler disseminated in Baglung, Myagdi and Ramechhap</li> <li>1 Sisno dryer installed in Myagdi</li> <li>Training on Lokta boiler at Ghandruk completed</li> </ul>	100%	UNDP	7,950	5,964	75%	
	Activity 3b.5.9: Document and showcase successful enterprises for replication	Successful Case studies on marginalized entrepreneurs	<ul style="list-style-type: none"> <li>Case studies prepared</li> </ul>	100%	UNDP	1,000	934	93%	
	Activity 3b.7.1: Provide training/orientation to potential women and marginalized entrepreneurs to switch to electricity and to establish new enterprises	Organize Training	<ul style="list-style-type: none"> <li>Business Management Training conducted</li> </ul>	100%	GEF	12,500	11,689	94%	
		Impact Study	<ul style="list-style-type: none"> <li>Study on impact of PEU on women completed</li> </ul>	100%	UNDP	3,500	2888	83%	

<b>Sub Total Activity Result 3b</b>						<b>76,766</b>	<b>67,936</b>		
<b>Activity Result 4:</b> Enhanced capacities and skills of various stakeholders in the RE sector	Activity 4.2.3 Support NRREP in developing project development, system design and integration manuals for large-scale solar PV systems	Design manual for LSPV and hybrid system	<ul style="list-style-type: none"> <li>Design guideline of Large Scale Solar PV developed</li> </ul>	100%	GEF	2,500	2,234	89%	
<b>Annual Target:</b> Enhance technical capacities and skills in design, manufacture, installation and operation, management of rural RE projects planning, assessment and monitoring	Activity 4.3.3: Quality assurance procedures, training curriculum and manuals for Mini-hydro manufacturing and development	Sustainability Framework for large micro hydro power plant developed	<ul style="list-style-type: none"> <li>Sustainability Framework for mini, micro developed</li> </ul>	100%	GEF	8,000	7,173	90%	
	Activity 4.3.4: Conduct quality assurance and standardization training	Provide training to POV Inspectors	<ul style="list-style-type: none"> <li>Training on Power Output organized</li> </ul>	100%	GEF	6,500	6,001	92%	
	Activity 4.4.2 Support AEPC in developing pre-qualification criteria and methodology of certification for installation of Large-scale solar PV systems	Installation manual for LSSPV technicians	<ul style="list-style-type: none"> <li>Large Scale Solar PV solar wind hybrid developed</li> </ul>	100%	GEF	5,000	4,697	94%	
<b>Sub Total Activity Result 4</b>						<b>175,532</b>	<b>155,977</b>		

**Annex I: District wise Institutional Solar PV System supported by RERL**

S.N	District	No.	kWp	HHs	People
1	Makawanpur	4	1.2	3,751	19,731
2	Dolakha	10	3.0	4,522	22,359
3	Ramechhap	10	3.0	11,637	42,718
4	Rasuwa	5	1.5	2,844	11,775
5	Sindhuplachowk	36	10.48	22,250	98,680
6	Sindhuli	10	3.0	10,081	55,603
7	Gorkha	18	5.37	19,731	76,385
8	Okhaldhunga	18	5.4	13,743	69,745
<b>Total</b>		<b>111</b>	<b>33</b>	<b>88,559</b>	<b>396,996</b>

*# of beneficiaries from services provided by the public institutions*

**Annex II: List of EQ affected Micro Hydro supported by RERL**

S.N	Name of Project	kW	HHs	District	VDC
1	Saha Khola	9	113	Gorkha	Saurpani-1
2	Adheri khola I	13	118	Gorkha	Hansapur-3
3	Lili khola	35	300	Gorkha	Kharibot-4
4	Upper Hundi Khola	35	374	Gorkha	Saurpani/Swara
5	Maglung Khola	25	250	Gorkha	Gumda
6	Nauli Khola III	30	251	Gorkha	Lapu
7	Bhut Khola	45	376	Gorkha	Gumda
8	Sthul Khola	70	586	Gorkha	Swara
9	Nauli Khola II	16	146	Gorkha	Lapu
10	Upper Hundi Khola III	22	235	Gorkha	Saurpani/Swara
11	Kalsyong Khola	20	250	Dhading	Re
12	Kintang Khola	40	350	Dhading	Gumdi
13	Kupende Pachase	18	186	Dhading	Katung-4
14	Lisne Khola	72	565	Dhading	Jharlang -1
15	Mangpang Khola II	11	114	Dhading	Budhathum 1
16	Mangpang khola V	10	104	Dhading	Budhathum
17	Mangpang Khola VI	10	102	Dhading	Budhathum
18	Kheste Khola I	9	100	Dhading	Baireni
19	Kheste Khola II	12	107	Dhading	Baireni
20	Malekhu Khola III	12	124	Dhading	Mahadevsthan
21	Malekhu Khola IV	15	135	Dhading	Mahadevsthan
22	Malekhu Khola I	26	265	Dhading	Mahadevsthan
23	Malekhu Khola II	18	166	Dhading	Mahadevsthan
24	Lapang Khola	9	105	Dhading	Marpak
25	Liti Khola	15	90	Dhading	Tasarpu
26	Chhopta Khola	40	340	Dhading	Sertung

27	Kholpe Khola	100	850	Dhading	Sertung
28	Nagara Ghatte Khola	40	385	Dolakha	Alampu
29	Ruptang Khola	52	520	Dolakha	Bigu
30	Ghatte Khola	12	240	Dolakha	Khopachngu
31	Kolung Khola	50	598	Dolakha	Suri
32	Thulo Sim Ghatte Khola	21	189	Dolakha	Lamidanda
33	Shyankhu Khola	30	330	Dolakha	Chilankha
34	Kakchepu Khola	32	320	Dolakha	Jhyanku
35	Dorung Khola	29	324	Dolakha	Chilankha
36	Doling Khola	37	308	Dolakha	Chankhu
37	Chhahare Khola	17	173	Sindhupalchowk	Baruwa
38	Bhuma Khola	13	162	Sindhupalchowk	Pangtang
39	Bedang Khola	13	144	Sindhupalchowk	Gumba
40	Nagdaha Khola	19.2	165	Makawanpur	Tistung –9
41	Reuti Khola	4	61	Makawanpur	Kakada –7
42	Reuti Khola Segum Tikedhunge	8	107	Makawanpur	Kakada –6
44	Phedi Khola	22	226	Ramechap	Daduwa
43	Parbati Khola II	21	210	Kavrepalanchok	Budhakhani
45	Parbati Khola I	21	150	Kavrepalanchok	Budhakhani
46	Daune Khola	12	107	Kavrepalanchok	Mangaltar
47	Chauri Khola V	29	290	Kavrepalanchok	Magipeda
48	Durlung Khola II	20	179	Kavrepalanchok	Milche
49	Pokhara Khola	11	118	Kavrepalanchok	Phoksintar
50	Kulkule Khola	12	107	Kavrepalanchok	Milche
51	Chau Khola I	22	194	Kavrepalanchok	Gokule
52	Chau Khola II	24	238	Kavrepalanchok	Dadagau
53	Chau Khola III	28	254	Kavrepalanchok	Dadagau
54	Chau Khola IV	20	205	Kavrepalanchok	Dadagau
55	Rumdu Khola	12	120	Okhaldhunga	Manebhanjyang
56	Kakani Khola II	12	125	Okhaldhunga	Katunje
57	Bhusinga Khola	75	750	Okhaldhunga	Bhusinga
58	Phedi Khola	9	104	Okhaldhunga	Kalika
59	silkhu Khola	30	313	Okhaldhunga	singhadevi
60	Salpu Khola	13	124	Okhaldhunga	Ragani
61	thotne Khola II	57	528	Okhaldhunga	Diyale
62	Pokali Khola	12	120	Okhaldhunga	pokali
63	Para Khola II	13	149	Okhaldhunga	Mulkharkha
<b>Total</b>		<b>1589.2</b>	<b>15,339</b>		

### Annex III: List of Micro Hydro Plant installed in 2016

S.N	Name of MHP	District	VDC	Power Output (kW)	HHs	Remarks
1	Adheri khola I MHP	Gorkha	Hansapur-3	13	118	Rehab
2	Lili khola MHP	Gorkha	Kharihot-4	35	300	Rehab
3	Upper Hundi Khola	Gorkha	Saurpani/Swara	35	374	Rehab
4	Maglung Khola	Gorkha	Gumda	25	225	Rehab
5	Sthul Khola	Gorkha	Swara	70	586	Rehab
6	Nauli Khola II	Gorkha	Lapu	16	146	Rehab
7	Kheste Khola I MHP	Dhading	Baireni	9	100	Rehab
8	Kheste Khola II	Dhading	Baireni	12	107	Rehab
9	Malekhu Khola	Dhading	Mahadevthan	26	265	Rehab
10	Malekhu Khola IV	Dhading	Mahadevthan	18	170	Rehab
11	Malekhu Khola III	Dhading	Mahadevthan	12	125	Rehab
12	Malekhu Khola IV	Dhading	Mahadevthan	15	135	Rehab
13	Manpang Khola II	Dhading	Budathum	11	114	Rehab
14	Lapang Khola	Dhading	Marpak	9	103	Rehab
15	Mangpang Khola V	Dhading	Bhudhathum	10	104	Rehab
16	Kholsyang Khola	Dhading	Ri	20	250	Rehab
17	Mangpang Khola VI	Dhading	Phulkharka	11	102	Rehab
18	Kingtang Khola	Dhading	Darkha	40	350	Rehab
19	Shyankhu Khola	Dolakha	Chilankha	30	330	Rehab
20	Ghatte Khola	Dolakha	Khopachngu	12	119	Rehab
21	Kakchepu Khola	Dolakha	Jhyanku	32	320	Rehab
22	Dorung Khola	Dolakha	Chilankha	29	324	Rehab
23	Ruptang Khola	Dolakha	Bigu	52	520	Rehab
24	Kolung Khola	Dolakha	Suri	50	598	Rehab
25	Korung Khola	Dolakha	Marbu	30	347	Rehab
26	Nagara Ghatte Khola	Dolakha	Alampu	40	385	Rehab
<b>Sub Total</b>				<b>662</b>	<b>6,617</b>	
1	Chhote Khola MHP	Lamjung	Dhodeni-8	66	334	RERL TA
2	Upper Rok Khola MHP	Solukhumbu	Sotang	76	676	RERL TA
3	Budum Khola MHP	Solukhumbu	Gudel	100	862	RERL TA
4	Khaksewa Khola MHP	Taplejung	Manankhe-8	70	627	RERL TA
5	Kholpe Khola MHP	Dhading	Sertung-8	100	720	RERL TA
6	Tribeni Solu Khola MHP	Solukhumbu	Salyan	100	890	RERL TA
7	Muwa Khola MHP (ISPU)	Panchthar	Prangbung	100	635	RERL TA
8	Shiwa Khola MHP (ISPU)	Taplejung	Khebang-1	70	486	RERL TA
9	Juke Dovan Likhu Khola MHP	Okhaldhunga	Yasam	88	563	RERL TA

10	Khari Khola III MHP (ISPU)	Solukhumbu	Juving -2	70	446	RERL TA
11	Jhumsa Khola III MHP	Palpa	Gothadi-8	68	503	RERL TA
12	Tunda Gad MHP	Doti	Chawarachhautara-8	65	585	RERL TA
13	Juil Gad II MHP ( ISPU)	Bajhang	Maulali	76	780	RERL TA
14	Baddi Gad MHP (ISPU)	Bajura	Jagunnatha	100	1198	RERL TA
15	Tammawa Khola MHP (ISPU)	Taplejung	Tapethok	65	422	RERL TA
16	Solu Khola Ganku MHP (ISPU)	Solukhumbu	Panchan	100	824	RERL TA
17	Tap Khola MHP (ISPU)	Khotang	Khartamchha	69	445	RERL TA
<b>Sub Total</b>				<b>1,383</b>	<b>10,996</b>	
<b>Total</b>				<b>2,045</b>	<b>17,613</b>	

**Annex IV: List of Trainings Organized in 2016**

S.N	Training	Participants	
		Male	Female
1	Business Management Training for women for Western Region	0	25
2	National Workshop Grid Connection of Renewable Energy Technologies	53	3
3	Orientation on Mini-hydro and Large Scale Solar PV Financing for CREF Partner Bank	9	3
5	Lokta Training	12	2
6	Power Output Verification Training for Inspectors	24	1
7	Orientation on MHP and Enterprise Model for DCRDC staff	35	0
8	Large Scale Solar PV (LSSPV) Training for Department of Electricity Development (DoED) engineers	23	2
9	Training for AEPC and DEEC Officer (Social Innovation Exchange)	0	9
10	Refresher training on Micro Hydro Operator for Mid and Far Western Region	22	0
11	Micro Hydro Manager's training for commercial operation for Mid and Far Western Region	20	0
12	Orientation on preparation of District Electrification Master Plan	20	2
<b>Total</b>		<b>218</b>	<b>47</b>

### Annex V: GESI Activities for 2016

Activities dedicated to Gender Equality and Social Inclusion	Planned (USD)	Expenditure (USD)	Gender Ranking	Remarks
Support AEPC/NRREP for revision of Existing Subsidy Policy and its delivery mechanism to make it GESI sensitive	2,900.00	2,864.00	3	Additional financial assistance is provided to women headed and marginalized households
1 District Electrification Master Plan prepared & 18 DDC oriented on DEMP preparation	6,500.00	6,407.00	2	Electrification plan for the entire district is prepared. This ensures that areas inhabited by vulnerable/marginalized groups are also included in the plan.
Capacity Development for government agencies (Department of Electricity Development)	2,950.00	2,849.00	1	26 engineers, including 2 women
Detailed Feasibility of the selected Mini Hydro	27,000.00	25,068.00	2	DFS takes into account vulnerable community development too
Support establishment of a Special Purpose Vehicle	2,500.00	2,267.00	2	In decision making body marginalized communities and women are represented
Cooperative formation to manage Large SPV and Wind Hybrid village electrification in Bhorleni	5,000.00	5,000.00	3	Bhorleni is a bazaar in Makwanpur with large Tamang, Magar & Majhi communities
Support for solar pumping for irrigation projects	26,500.00	23,383.00	3	In Makwanpur & Bara districts. The farmers are small landholders from marginalized communities.
Dhading Solar Project: 3 Mini Grids, 1 Pumping & 1 Micro Industrial Hub	82,400.00	82,092.85	3	The beneficiaries are from Tamang & extremely marginalized Chepang communities
Solar solution for Earthquake affected areas (public institutions, mobile charging, etc	214,520.00	202,140.00	3	Earthquake victims
Rehabilitation of Micro Hydro in Earthquake affected areas	378,050.00	374,758.00	3	Earthquake victims
Adaptation/modification of technologies for rural Nepali context (Sisno Dryer, Khuwa Agitator, Lokta Boiler & Lift Irrigation)	9,300.00	5,963.00	3	Focusing on women and DAG
Sustainability Framework for large micro hydro power plant developed	7,200.00	7,173.00	2	GESI related indicators considered in sustainability framework
Support for Business Management Training for women entrepreneurs and impact study	8,000	7,593.67	3	
	3,200	2,888.43	3	
<b>Total GESI Budget</b>	<b>776,020.00</b>	<b>750,446.95</b>		
<b>Total Annual Budget</b>	<b>1,808,237.00</b>	<b>1,707,824.00</b>		



**Annex V: List of Enterprise installed in 2016**

SN	Name of Enterprises	Name of Entrepreneur	Gender	Caste	District	VDC
1	Bhimgethe Grill Udhog	Lila Bahadur Kunwar	Male	B/C/T	Baglung	Bhimghite
2	Bhimgethe Puroti Udyog	Dipendra Pun	Male	Janajati	Baglung	Bhimghite
3	Kharbang Choumin Udyog	Dorna Ban	Male	Janajati	Baglung	Dagatundanda
4	Minita Puroti Udhog	Jash Bahadur B.K	Male	Dalit	Baglung	Nisi
5	Sunar Rice and Floor Mill	Jitman Sunar	Male	Janajati	Baglung	Nisi
6	Simalchaura pumping Irrigation Scheme	Bal Nar Singh Kumal/ Krishna Bahadur Kumal	Male	Janajati	Baglung	Burtibang
7	Kiran Grill Udhog	Kamal Thapa	Male	B/C/T	Baglung	Dagatundanda
8	New Kalika Baglung Firm	Khadka Bahadur Pun	Male	Janajati	Baglung	Dagatundanda
9	Dudewachaur Sa. Ba.Uhu Milijuli Mahuri Ghar Udhog	Tej Bahadur Rana (Kumal)	Male	Janajati	Baglung	Dagatundanda
10	Dinesh Rice Mill	Gobinda Budha Magar	Male	Janajati	Baglung	Nisi
11	Thirbang Floor mill	Bir Prasad Gharti Magar	Male	Janajati	Baglung	Bongadobhan
12	Jal Devi Chisyan Kendra	Bhoj Bahadur Khadka	Male	B/C/T	Dhading	Baireni
13	Bohara Kutani Pisani Mill	Prem Bahadur Bohara	Male	B/C/T	Gulmi	Darling
14	Buddha Himali Furniture Udhog	Mahadev Prasad Ghale	Male	Janajati	Gorkha	Barpak
15	Manaslu Grill Udhog	Raju Sinchuri Sunar	Male	Dalit	Gorkha	Barpak
16	Chudamani Rice Mill	kalu ram Sarki	Male	Dalit	Gorkha	Saurapani
17	Barpak Chwmein and Mithai Udhog	Bal Shamsheer Gurung	Male	Janajati	Gorkha	Barpak
18	Man kutani Pisani Mill	man Bahadur Gurung	Male	Janajati	Gorkha	Saurapani
19	Bikram Masu Pasal	Bhim Narayan Shrestha	Male	Janajati	Gorkha	Saurapani
20	Ram Kutani Pisani Mill	Ram Bahadur Gurung	Male	Janajati	Gorkha	Saurapani
21	Shyam Kutani Pisani Mill	Shyam Bahadur Gurung	Male	Janajati	Gorkha	Saurapani
22	Shrestha Kutani Pisani Mill	Tika Ram Shrestha	Male	Janajati	Gorkha	Saurapani
23	New Laligurans Computer Institute	Bhoj Raj Bhattarai	Male	B/C/T	Gulmi	Purkot Daha
24	Saurapani Masala Udhog	Keshari Prasad Dhakal	Male	B/C/T	Gorkha	Saurapani
25	Karna Fresh House	Karna Bahadur Nepali	Male	Dalit	Kaski	Ghandruk
26	German Bakery Udhog	Chak Bahadur Gurung	Male	Janajati	Kaski	Ghandruk
27	Ghandruk Meshram Chowmein Udhog	Dev Kumari Sharma	Female	B/C/T	Kaski	Ghandruk
28	Annapurna Lokta paper and Handicraft	Purna Bahadur Gurung	Male	Janajati	Kaski	Ghandruk
29	Ghandruk Suddha Khanepani Udhog	Udi Subha Gurung/Kamala Gurung	Male	Janajati	Kaski	Ghandruk

30	Kimche Fresh House	Gam Prasad Gurung	Male	Janajati	Kaski	Ghandruk
31	Pujan Fresh House	Prem Upadhaya	Male	B/C/T	Kaski	Ghandruk
32	Kamche Rice Mill	Bal Bahadur Gurung	Male	Janajati	Kaski	Ghandruk
33	Aarati Fresh House	Kosh Bahadur Upadhaya	Male	B/C/T	Kaski	Ghandruk
34	Sanjog Bakery Udyoug	Shanta Maya Gurung	Female	Janajati	Kaski	Ghandruk
35	Kimche Dhup Udhyog	Bidhya B.K	Female	Dalit	Kaski	Ghandruk
36	Gurung Computer Institute	Mangal Bahadur Gurung	Male	Janajati	Lamjung	Tadhing
37	Yam and Hira Grill Udhyog	Hira Bahadur/ yam Bahadur B.K	Male	Dalit	Myagdi	Darwang
38	Darbang Grill Udhyoug	Bil Bahadur Gharti	Male	Janajati	Myagdi	Darwang
39	Aashis Chau Chau Udhyog	Prem Kumar Roka	Male	B/C/T	Myagdi	Darwang
40	Kiran Stationery Centre	Kiran Thapa	Male	B/C/T	Myagdi	Darwang
41	Manisha Fresh House	Suwa Raj Gurung	Male	Janajati	Lamjung	Pachok
42	New Chandra Rice Mill	Dudhe Gurung	Male	Janajati	Lamjung	Pachok
43	G.S Fresh House	Gaina Sing Gurung	Male	Janajati	Lamjung	Pachok
44	Hiramoti Rice Mill	Vichha Bhadur Ghale	Male	Janajati	Lamjung	Pachok
45	New Ghale Fresh House	Tej Ghale	Male	Janajati	Lamjung	Tadhing
46	Manaslu Rice Mill	Birkha Bahadur Gurung	Male	Janajati	Lamjung	Tadhing
47	Kingzon Photo Studio	Tul Bahadur Ranamagar	Male	Janajati	Nawalparasi	Jaubari
48	Angila Photocopy Centre	Dhak Bhadur Rana	Male	Janajati	Nawalparasi	Jaubari
49	Devsat Photo Studio & Photocopy Centre	Bal Krishan Lamsal	Male	B/C/T	Nawalparasi	Bulingtar
50	Poudel Poultry Farm & Fresh House	Kos Raj Poudel	Male	B/C/T	Nawalparasi	Bulingtar
51	Shrestha Supreme Poultry Farm	Ashok Kumar Shrestha	Male	Janajati	Nawalparasi	Bulingtar
52	Devchuli Communication	Dev Bhadur Lungeli	Male	Janajati	Nawalparasi	Bulingtar
53	Shrestha Masala Udhyog	Man Bahadur Shrestha	Male	Janajati	Nawalparasi	Jaubari
54	Acharya Diary Udhyog	Krishna Prasad Acharya	Male	B/C/T	Myagdi	Darwang
55	Tara Furniture Udhyog	Sam Bahadur B.K	Male	Dalit	Myagdi	Darwang
56	Darbang Photo Shop	Yam Bahadur Nepali	Male	Dalit	Myagdi	Darwang
57	Langali Funiture Udhyog	Lalima Pun	Female	Janajati	Myagdi	Darwang
58	Jeevan Block Udhyog	Tanka Prasad Purja	Male	Janajati	Myagdi	Darwang
59	Siuthani Block Udhyog	Nurmaya Siuthani	Female	Janajati	Myagdi	Darwang
60	Kunwar Furniture Udhyog	Lak Bahadur Shirpani	Male	Janajati	Myagdi	Darwang
61	Alfa Furnising Udhyog	Chandra Bahadur Bohora	Male	B/C/T	Myagdi	Darwang

62	Immanuel Electronics	Yam Bahadur Malla	Male	B/C/T	Myagdi	Darwang
63	Nirmaya Puroti Udhyog	Jhabi Lal Chuwan	Male	B/C/T	Nawalparasi	Ruchang
64	Rana Huller/Grinder Mill	Ambar Bahadur Rana	Male	Janajati	Palpa	Rahabas
65	Rana Huller /Grinder Mill	Ran Bahadur Rana	Male	Janajati	Palpa	Rahabas
66	Maulathar Rice Mill	Tul Bahadur Rana	Male	Janajati	Palpa	Rahabas
67	Aasha Rice Mill	Rim Bahadur Rana	Male	Janajati	Syangja	Chandibhanjyang
68	Rijal Block Udhyog	Chinta Mani Sharma	Male	B/C/T	Syangja	Chandibhanjyang
69	Kopila Juice Tatha Sauce Udhyog	Rewati Maya Thapa	Female	B/C/T	Syangja	Chitrebhanjyang
70	Manu Milan Bakery Udhyog	Mekha Bahadur Thapa	Male	B/C/T	Syangja	Chitrebhanjyang
71	Samiksha Fresh House	Narayan Dutta Lamsal	Male	B/C/T	Syangja	Magyam Chisapani
72	Madan Fresh House	Puspa Raj Lamsal	Male	B/C/T	Syangja	Magyam Chisapani
73	Navin Photo Studio	Navin Kumar Shrestha	Male	Janajati	Syangja	Magyam Chisapani
74	Kharel Kutani Pisani Mill	Niroj Kharel	Male	B/C/T	Gulmi	Neta
75	Mohan Tailoring and Training Center	Man Bahadur Damai	Male	Dalit	Gulmi	Purkot Daha
76	Kharel Fresh House	Himal Kharel	Male	B/C/T	Gulmi	Neta
77	Garima Fresh House	Nir Bahadur Bayambu	Male	Janajati	Palpa	Galdha
78	Masu Pasal (Fresh House)	Tharka Bahadur Thapa	Male	B/C/T	Palpa	Galdha
79	Dhunganabesi Bakery Udhyog	Til Bahadur Bayambu	Male	Janajati	Palpa	Galdha
80	Ruchang Masala Udhyog	Man Bahadur Saru	Male	Janajati	Nawalparasi	Ruchang
81	Rakim Aran Udhyog	Ek Bahadur Rakim Magar	Male	Janajati	Nawalparasi	Ruchang
82	Manisha Photo Studio and Communication	Sun Bahadur Saru Magar	Male	Janajati	Nawalparasi	Ruchang
83	Srees Sinki Chauchau Udhyog	Amar Bahadur Gaha Magar	Male	Janajati	Nawalparasi	Ruchang
84	Aayusya and Aayus Masu Pasal	Aatma Ram Chalise	Male	B/C/T	Baglung	Burtibang
85	Kharbang Masala Udhyog	Shanti Kumari Adhikari	Female	B/C/T	Baglung	Dagatundanda
86	Ghandruk Chauchau Udhyog	Dhan Kumari Chheteri	Female	B/C/T	Kaski	Ghandruk
87	Mina Masu Pasal	Hari Bahadur G.C	Male	B/C/T	Baglung	Burtibang
88	Nisi Lagu Udyum Sisno Powder Udhyog	Mahendra Kumari Gharti Magar	Female	Janajati	Baglung	Nisi
89	Tilak Devi Dhara Rice Mill	Sushil Rasaili	Male	Dalit	Baglung	Bongadobhan
90	Pradip Kutani Pisani Mill	Pradip Pun	Male	Janajati	Baglung	Sisakhani
91	Saujan Tile Udhyog	Hira Bahadur Galami	Male	Janajati	Baglung	Pandabkhani
92	Deurali Kutani Pisani Mill	Rim Bahadur Kaucha	Male	Janajati	Baglung	Pandabkhani

93	Amrit Pelani Pisani Mill	Pur Bahadur Gurung	Male	Janajati	Gorkha	Laparak
94	Pritam Bakery Udhog	Hom Bahadur Gurung	Male	Janajati	Gorkha	Muchok
95	Bhome Nepali kagaj Udhog	Geet Bahadur Gurung	Male	Janajati	Gorkha	Laparak
96	Thanimai Kutani Pisani Mill	Go-Maya Gurungseni	Female	Janajati	Gorkha	Ghyachok
97	Dudh Pokhari Fresh House	Gaj Bahadur Gurung	Male	Janajati	Lamjung	Dudhpokhari
98	Saraswati Rice Mill	Til Kumari Gurung	Female	Janajati	Gorkha	Takukot
99	Sunder Kalika Rice Mill	Bagar Bahadur Tamang	Male	Janajati	Dhading	Pida
100	Sujan Mill	Sujan Devkota	Male	B/C/T	Gorkha	Muchok
101	Laparak Masu Pasal	Hasbal Gurung	Male	Janajati	Gorkha	Laparak
102	Milan Rice Mill	Bhim Bahadur Gurung	Male	Janajati	Lamjung	Ilampokhari
103	P4 Fresh House	Prati Jung Tamang	Male	Janajati	Lamjung	Taghring
104	Gurung Rice Mill	Om Bahadur Gurung	Male	Janajati	Lamjung	Ilampokhari
105	Gairegaun Fresh House	Kumari Gurung	Female	Janajati	Lamjung	Dudhpokhari
106	Saurpani Photo Studio	Shanta Narayan Shrestha	Male	Janajati	Gorkha	Saurapani
107	Haste Pisani Mill	Hasta Bahadur Gurung	Male	Janajati	Gorkha	Laparak
108	Thulo Kavre Rice Mill	Tulasa Ghale (Gurung)	Female	Janajati	Lamjung	Ilampokhari
109	Nage Pokhari Masu Pasal	Khem Raj Gurung	Male	Janajati	Gorkha	Ghyachok
110	Rachana Swachha Masu Pasal	Ram Chandra Devkota	Male	Janajati	Gorkha	Muchok
111	Bhot Khola Tel Pisani Mill	Ram Bahadur Gurung	Male	Janajati	Gorkha	Gumda
112	Kachal Phant Fresh House	Rewanta Bahadur Chhahari	Male	B/C/T	Palpa	Kachal
113	Delta Fresh House	Dil Bahadur Thapa	Male	B/C/T	Kaski	Lumle
114	Ganesh Himal Rice Mill	Singh Bahadur Tamang	Male	Janajati	Dhading	Lapa
115	Bal Vidya Mandir Cyber and Photocopy	Niraj Bastakoti	Male	B/C/T	Nawalparasi	Bulingtar
116	Tilganga Masala Udhog	Til Sara Thapa	Female	B/C/T	Syangja	Chitre Bhanjyang
117	Buddha Photo Studio	Buddha Bahadur Thapa Magar	Male	B/C/T	Nawalparasi	Jaubari
118	Rudrapur Sinke Chau Chau Tatha Chaumin Udhog	Dhan Bahadur Thapa	Male	B/C/T	Nawalparasi	Jaubari
119	Yamuna Rice Mill	Tej Bahadur Lamichhane	Male	B/C/T	Dhading	Gumdi
120	Anusha Rice Mill	Bahadur Singh Ghale	Male	Janajati	Dhading	Gumdi
121	Singla Devi Rice Mill	Phaichhiring Tamang	Male	Janajati	Dhading	Sertung
122	Buddhiman Pisani Mill	Buddhiman Thokat Tamang	Male	Janajati	Dhading	Tasarpu
123	Archale Fresh House	Vhim Bahadur Lungeli Magar	Male	Janajati	Dhading	Mahadevsthan

124	Mala Rice Mill	Narayan Bahadur Rijal	Male	B/C/T	Dhading	Darkha
125	Puspa Dudh Pasal	Mukta Bahadur Singh	Male	B/C/T	Baglung	Devasthan
126	Samuyal Grill Udhyog	Dil Bahadur Karki	Male	B/C/T	Baglung	Devasthan
127	Ramjali computer Institute	Chandra Singh Ramjali	Male	Janajati	Baglung	Devasthan
128	R.B. Fresh House	Rom Bahadur Lamtari	Male	Janajati	Palpa	Kachal
129	Sunari Fresh House	Chahabi Lal Sunari	Male	Dalit	Palpa	Rahabas
130	New Fresh House	Sumitra Thapa	Female	B/C/T	Palpa	Rahabas
131	Sunil, Sandip, Sanam Fresh House	Indra Kumari Thapa	Female	B/C/T	Syangja	Chandibhanjyang( Karikot)
132	Simran Silai Katai Udhyog	Hira Damai	Male	Dalit	Syangja	Magyam Chisapani
133	Ane Chhantyal Masu Pasal	Ane Chhantyal	Male	Dalit	Baglung	Jaljala
134	Paija Pisani Mill	Mukta Bahadur Paija	Male	Janajati	Baglung	Gwalichaur
135	Rudra Masu Pasal	Rudra Bahadur Pun	Male	Janajati	Baglung	Jaljala
136	Roka Masu Pasal	Gom Bahadur Roka	Male	Janajati	Baglung	Burtibang
137	Khatri Masu Pasal	Bir Bahadur Khatri	Male	B/C/T	Baglung	Bhingithey
138	Machhapuchre Chiuri Harbal Sabun Udhyog	Nar Bahadur Chhetri/Dhan Bahadur Gurung	Community	Other	Baglung	Bhingithey
139	Paschimanchal Technical Institute	Jeevan Safal Chhantyal	Male	Dalit	Baglung	Burtibang
140	Moonlight Bakery Udhyog	Kancha Gurung	Male	Janajati	Manang	Tankilmanang
141	Green Bakery Udhyog	Bikram Gurung	Male	Janajati	Manang	Manang
142	Manang Thukppa Udhyog	Sagar Gurung	Male	Janajati	Manang	Manang
143	Sanna Bakery Udhyog	Binod Gurung	Male	Janajati	Manang	Manang
144	S.T Computer Institute	Pemba Dorge Gurung	Male	Janajati	Manang	Manang
145	Manang Yak Cheese Udhyog	Raju Gurung	Male	Janajati	Manang	Manang
146	Deurali Computer Sewa Tatha Photocopy Centre	Dil Bahadur Thapa	Male	B/C/T	Syangja	Chitre Bhanjyang
147	Chhantyal Computer Sewa	Tilak Chhantyal	Male	Dalit	Baglung	Jaljala
148	Kota Grill Udhyog	Dhan Raj Gurung	Male	Janajati	Tanahu	Kot
149	Kosish Block Udhyog	Him Raj Gurung	Male	Janajati	Tanahu	Kot
150	Indreni Puroti Udhyog	Indra Bahadur Ranabhat	Male	B/C/T	Tanahu	Baidi
151	Gaunle Kutani Pisani Mill	Krishna Bahadur Thapa Magar	Male	Janajati	Gorkha	Thumi
152	Laprak Computer Institute	Jit Bahadur Gurung	Male	Janajati	Gorkha	Laprak
153	Punya Rice Mill	Bir Bahadur Tamang	Male	Janajati	Gorkha	Swara
154	Chidi Fresh House	Babu Ram Chidi	Male	B/C/T	Palpa	Koldanda

155	Shanti Fresh House	Chure Bishwokarma	Male	Dalit	Palpa	Koldanda
156	Rana Fresh House	Thaman Sing Rana	Male	Janajati	Palpa	Koldanda
157	Lal Fresh House	Lal Bahadur Bayambu	Male	Janajati	Palpa	Galdha
158	Materi Kutani Pisani	Dal Bahadur Chauhan	Male	B/C/T	Palpa	Rahabas
159	Bayambu Fresh House	Hom Bahadur Bayambu	Male	Janajati	Palpa	Galdha
160	Smriti Kutani Pisani Mill	Bhupendra Gharti Magar	Male	Janajati	Baglung	Nisi
161	Shital Fresh House	Parbati Thapa	Female	Janajati	Syangja	Magyam Chisapani
162	Deurali Photo Studio	Kosh Bahadur Thapa	Male	Janajati	Syangja	Chandibhanjyang( Karikot)
163	Sigdel Rice Mill	Krishna Prasad Sigdel	Male	B/C/T	Syangja	Magyam Chisapani
164	Chitre Langhali Kutani Pisani Udhyog	Bal Krishna Rana	Male	Janajati	Syangja	Chandibhanjyang( Karikot)
165	Ramche Janasewa Rice Mill	Durga Bahadur Rana	Male	Janajati	Syangja	Chandibhanjyang( Karikot)
166	Sapkota Kutani Pisani Mill	Balibhadra Sapkota	Male	B/C/T	Baglung	Boharagaun
167	Dhan Bahadur Kutani Pisani Mill	Dhan Bahadur Thapa	Male	Janajati	Baglung	Dagatundanda
168	Birkot Kutani Pisani Mill	Nanda Bahadur Darlami	Male	Janajati	Baglung	Kandebas
169	Buddha Bangur Masu Pasal	Buddhi Man B.K.	Male	Dalit	Baglung	Burtibang
170	Aakriti Photo Copy Centre	Top Bahadur Darlami	Male	Janajati	Baglung	Dagatundanda
171	Puspa Kutani Pisani Mill	Resham Lal Thapa Magar	Male	Janajati	Nawalparasi	Ruchang
172	K.B Kutani Pisani Mill	Khadka Bahadur Magar	Male	Janajati	Dhading	Mahadevsthan
173	Sita Kaudi Rice Mill	Man Bahadur Ghale	Male	Janajati	Dhading	Budhathum
174	Chuli Devi Rice Mill	Min Bahadur Adhikari	Male	B/C/T	Dhading	Budhathum
175	Sujan Kutani Pisani	Bal Bahadur Ghale	Male	Janajati	Dhading	Budhathum
176	Bibas Rice Mill	Bahadur Ghale	Male	Janajati	Dhading	Budhathum
177	Jit Bahadur Kutani Pisani Mill	Jit Bahadur Tamang	Male	Janajati	Dhading	Mahadevsthan
178	Pancha Ganga Samudayik Furniture Udhyog	Ram Bahadur Gharti Magar	Male	Janajati	Baglung	Bobang
179	Balami Welding Workshop	Tek Bahadur Balami	Male	Janajati	Baglung	Dagatundanda
180	Machi Khola Chowmin Udhyog	Kemi Gurung	Male	Janajati	Gorkha	Gumda
181	Sanam Tailaring Center	Saha Bahadur Pariyar	Male	Dalit	Myagdi	Darwang
182	Osan And Sneha Motorcycle Servicing Center	Ganesh Bahadur Thapa	Male	B/C/T	Myagdi	Darwang
183	Dorge Poultry Suppliers	Dorge Gurung	Male	Janajati	Gorkha	Barpak
184	Ghale Rice Mill	Thim Bahadur Ghale	Male	Janajati	Gorkha	Barpak

185	Ranjib Gramin Computer Institute	Jit Bahadur Gurung	Male	Janajati	Gorkha	Lapu
186	Burtibang Subedi Puroti Udhog	Dor Lal Subedi	Male	B/C/T	Baglung	Burtibang
187	Mitra Furniture Udhog	Rosan Pun	Male	Janajati	Baglung	Dagatundanda
188	Hem Grill Udhog	Hem Prasad B.K.	Male	Dalit	Baglung	Burtibang
189	Burtibang Aaran Business Service	Man Bahadur B.K.	Male	Dalit	Baglung	Burtibang
190	Dhorpatan Offset Press	Till Bahadur Budha Magar	Male	Janajati	Baglung	Burtibang
191	Nishi Bhuji Furniture Udhog	Dhan Bahadur Khatri	Male	B/C/T	Baglung	Burtibang
192	Nishi Bhuji Grill Udhog	Man Bahadur Pun	Male	Janajati	Baglung	Burtibang
193	Radio Sarathi F.M.	Bishnu Prasad Bhusal	Male	B/C/T	Baglung	Dagatundanda
194	Barpak Dhunga Udhog	Hari Ghale and Kumar Ghimire	Community	Other	Gorkha	Barpak
195	Rabi Rice Mill	Chet Bahadur Thapa	Male	B/C/T	Syangja	Magyam Chisapani
196	Khom Bahadur Rana Rice Mill	Churamuni Rana	Male	Janajati	Nawalparasi	Jaubari
197	Smart Tailoring Centre	Tejendra Pariwar	Male	Dalit	Baglung	Burtibang
198	Nabina Tailoring Centre	Buddha Maya Bhanne Nabina Pariyar	Female	Dalit	Manang	Chane
199	Monika Computer Centre	Toran Chhantyal	Male	Dalit	Baglung	Burtibang
200	Prakash Kutani Pisani Rice Mill	Chandra Prakash B.K.	Male	Dalit	Tanahu	Kot
201	Birendra Puroti Udhog	Lal Bahadur Gurung	Male	Janajati	Tanahu	Kot
202	Khalte Rice Mill	Suk Bahadur Ranabhat	Male	B/C/T	Tanahu	Baidi
203	Shree Jhyalla Bhume Rice Mill	Bed Kumari Bastakoti	Female	B/C/T	Gorkha	Muchok
204	Dhanpurna Bakery Udhog	Kosi Ram Ghale	Male	Janajati	Gorkha	Barpak
205	Sapkota Kutani Pisani Mill	Devi Ram Sapkota	Male	B/C/T	Baglung	Adhikarichaur
206	Yogendra Rice Mill	Yogendra Gharti	Male	Janajati	Baglung	Boharagaun
207	Sagar Samundra Furniture Udhog	Guna Nidhi Ghimire	Male	B/C/T	Baglung	Gwalichaur
208	Jange Kutani Pisani Mill	Jang Bahadur Pun	Male	Janajati	Baglung	Sisakhani
209	K.C Masu Pasal	Man Bahadur K.C	Male	B/C/T	Baglung	Devisthan
210	Kunwar Masu Pasal	Narendra Kunwar	Male	B/C/T	Baglung	Devisthan
211	Dhrub Masu Pasal	Dhrub Raj Regmi	Male	B/C/T	Baglung	Boharagaun
212	Kiran Rice Mill	Ishwori Kumari Kunwar Chhetri	Female	B/C/T	Baglung	Devisthan
213	Krishna Pisani, Pelani Mill	Krishna Giri	Male	B/C/T	Baglung	Bongadobhan
214	Saru Fresh House	Khim Kumari Thapa	Female	B/C/T	Syangja	Chitrehanjyang
215	Susan Masu Pasal	Amrit Thapa	Male	B/C/T	Baglung	Rajkot



216	Pandabkhani Pisani Mill	Nabin Pun	Male	Janajati	Baglung	Pandabkhani
217	Tolka Rice Mill	Durga Bahadur Thapa Magar	Male	Janajati	Kaski	Lumle
218	Krishna Gharelu Rice Mill	Hari Bahadur Chhetri	Male	B/C/T	Kaski	Ghandruk
219	Salik Rice Mill	Salikram Pokhrel	Male	B/C/T	Gulmi	Musikot
220	Shree Ganesh Kutani Pisani Sewa	Chandra Bahadur Karki Chettri	Male	B/C/T	Gulmi	Musikot
221	Ghimire Fresh House	Hari Bahadur Ghimire	Male	B/C/T	Gulmi	Musikot
222	Musikot Kut Pis Sewa Mill	Ram Bahadur Singh	Male	B/C/T	Gulmi	Musikot
223	Deurali Masu Pasal	Mahendra Singh Thakuri	Male	B/C/T	Gulmi	Musikot
224	Goodfit Shirting Suting Tailoring Center	Ramesh Pariyar	Male	Dalit	Gulmi	Purkot Daha
225	New Famous Silai Tatha Kapada Pasal	Durga Damai	Male	Dalit	Gulmi	Wami Taksar
226	Raju Tailors	Dhaal Bahadur Darji	Male	Dalit	Gulmi	Wami Taksar
227	Manakamana Fresh House	Kalpana Karki	Male	B/C/T	Gulmi	Wami Taksar
228	Janasangita Pisani Mill	Hira Bahadur Khatri	Male	B/C/T	Gulmi	Paudiamarai
229	Sabitra Kutani Pisani Sewa	Drona Bahadur Pathak	Male	B/C/T	Gulmi	Paudiamarai
230	Ramdip Fresh House	Ram Bahadur Pun	Male	Janajati	Gulmi	Musikot
231	Thapa Digital Photo Studio	Mitra Bahadur Thapa	Male	B/C/T	Baglung	Rangkhani
232	Kunwar Rice Mill	Jit Bahadur Kunwar	Male	B/C/T	Baglung	Devasthan
233	Durlek Nepali Hate Kagaj Udhyog	Gange Bahadur Shreesh	Male	Janajati	Baglung	Rana Singh Kiteni
234	Salleri Samudayik Furniture Udhyog	Resham Tamang	Male	Janajati	Baglung	Burtibang
235	Prabesh Grill Udhyog	Goma Kandel Kharel	Female	B/C/T	Baglung	Gwalichaur
236	Sarbodaya Samudayik Biddhutiya Kutani Pisani Sahakari Santha Limited	Hem Lal Paudel	Male	B/C/T	Baglung	Sarkuwa
237	Trisana Motor Parts	Kubir B.K.	Male	Dalit	Baglung	Burtibang
238	Jan Sanchar Sahakari Santha Ltd	Ram Narayan Subedi	Male	B/C/T	Baglung	Burtibang
239	Burtibang Nilkamal Tailors	Gyan Devi Kami	Female	Dalit	Gulmi	Wami Taksar
240	Shiva Parwati Block Udhyog	Krishna Shahi	Male	B/C/T	Baglung	Boharaugaun
241	Milan Duna Tapari Udhyog	Damber Bahadur Shreesh	Male	Janajati	Baglung	Righa
242	Bhusal Electronics	Chandrakant Bhusal	Male	B/C/T	Baglung	Boharaugaun
243	Kandebas Cyber Center	Rajeev Sherchan	Male	Janajati	Baglung	Kandebas
244	Sujata Masu Pasal	Shanker Kharel	Male	B/C/T	Baglung	Gwalichaur
245	Acharya Masu Pasal	Nandalal Padhya	Male	B/C/T	Baglung	Rangkhani

246	Love Mobile	Kamal Bhandari	Male	B/C/T	Baglung	Kandebas
247	Barsha Masu Pasal	Buddhi Bahadur Singh	Male	B/C/T	Baglung	Devisthan
248	Manohar Rice Mill	Manohar Buda Magar	Male	Janajati	Baglung	Boharagaun
249	Burtibang Better Taste Masu Pasal	Jit Bahadur Malla	Male	B/C/T	Baglung	Burtibang
250	Nabin Kutani Pisani Mill	Nar Bahadur Gharti	Male	Janajati	Baglung	Bongadobhan
251	Anup Mill Udhyog	Yam Kumari B.K	Female	Dalit	Baglung	Bongadobhan
252	Prabin Masu Pasal	Tara Prasad Shrestha	Male	Janajati	Baglung	Rajkot
253	Nok Rice Mill	Nok Bahadur Khatri	Male	B/C/T	Baglung	Devisthan
254	Chantyal Rice Mill	Sabraj Chantyal	Male	Dalit	Baglung	Devisthan
255	Salamkot Kutani Pisani Mill	Nem Lal Kandel	Male	B/C/T	Baglung	Burtibang
256	Amar Pisani Mill	Amar Bahadur Buda	Male	B/C/T	Baglung	Adhikarichaur
257	Khadka Pisani Mill	Chit Bahadur Khadka	Male	B/C/T	Baglung	Burtibang
258	Prem Rice Mill	Prem Lal Damai	Male	Dalit	Baglung	Burtibang
259	Arnakot Masu Pasal	Shanker Bahadur Kunwar	Male	B/C/T	Baglung	Burtibang
260	Saldhari Fero Duna Tapari Udhyog	Man Kumari B.K	Female	Dalit	Baglung	Burtibang
261	Dhupibot Rice Mill	Bhim Sen Pun	Male	Janajati	Baglung	Adhikarichaur
262	Ganesh Puroti Udhyog	Lal Bahadur Pun	Male	Janajati	Baglung	Adhikarichaur
263	Gaunle Fresh House	Amrita Pun	Female	Janajati	Baglung	Adhikarichaur
264	Sherdhani Rice Mill	Dhane Giri	Male	B/C/T	Baglung	Adhikarichaur
265	Khanal Masu Pasal	Bom Bahadur Chhetri	Male	B/C/T	Baglung	Burtibang
266	Chisapani Namuna Rice Mill	Dil Bahadur G.T	Male	Janajati	Syangja	Magyam Chisapani
267	Kaladhar Rice Mill	Kaladhar Bhandari	Male	B/C/T	Syangja	Magyam Chisapani
268	Computer Education, Training and Photocopy Center	Keshab Sapkota	Male	B/C/T	Baglung	Adhikarichaur
269	Computer Talim Sikshya Tatha Photocopy center	Dhan Bahadur Mahat	Male	B/C/T	Baglung	Burtibang
270	Bohoragaun Grill Udhyog	Rajendra Shahi	Male	B/C/T	Baglung	Boharagaun
271	Laxmi Narayan Mahila Krishi Sahakari Krishijanya Masala Udhyog	Laxmi Narayan Mahila Krishi Sahakari Sanstha	Community	Other	Gulmi	Wamitaksar
272	Gautam Rice Mill	Bhim Bahadur Gautam	Male	B/C/T	Baglung	Adhikarichaur
273	New Public Engineering Service Center	Hem Bahadur Kunwar	Male	B/C/T	Baglung	Devisthan
274	Yuba Nisha Puroti Udhyog	Dhanmaya Ramjali	Female	Janajati	Baglung	Righa
275	Deep Kiran Samudayik Furniture Udhyog	Rul Bahadur Gharti	Male	B/C/T	Baglung	Khunga

276	Shree Sarbottam Pisani Mill	Bot Devi Gurung	Male	Janajati	Manang	Thoché
277	Himal Pauroti Udhog	Yaman Ghartimagar	Male	Janajati	Baglung	Nisi
278	Jhimel Gril Udhog	Buddhi Lal Gurung	Male	Janajati	Tanahu	Kota
279	Sabina Ice Cream Tatha Juice Udhog	Dev Bahadur Khandluk Magar	Male	Janajati	Nawalparasi	Jaubari
280	Khusi Masala Udhog	Dan Bahadur Wakalat Magar	Male	Janajati	Nawalparasi	Bulingtar
281	Soti Kutani Pisani Mill	Tarka Bahadur Soti Magar	Male	Janajati	Nawalparasi	Bulingtar
282	Mashrangi Kutani Pisani Mill	Tul Bahadur Mashrani Magar Thapa	Male	Janajati	Nawalparasi	Bulingtar
283	Bipin Fresh House	Nanda Bahadur Sireesh	Male	Janajati	Baglung	Rana Singh Kiteni
284	Shrees Kutani Pisani Mill	Tul Prasad Shress	Male	Janajati	Baglung	Rangkhani
285	Bimal Digital Photo Studio and Moble Center	Bimal Gharti	Male	B/C/T	Baglung	Bhimgithe
286	Bishwokarma Aaran Udhog	Gopiram Kami	Male	Dalit	Baglung	Burtibang
287	Amrita Kutani Pisani Mill	Yam Bahadur Balal Magar	Male	Janajati	Gulmi	Neta
288	Bibisha Masu Pasal	Ganga Thapa	Male	B/C/T	Baglung	Bhimgithe
289	L.B. Aaran Udhog	Jiya Lal Kami	Male	Dalit	Baglung	Bongadobhan
290	Janpriya Photo Studio Tatha Photocopy Center	Krishna Prakash Adai	Male	B/C/T	Baglung	Adhikarichaur
291	Gom Kutani Pisani Mill	Gom Bahadur Rana	Male	Janajati	Baglung	Dagatundanda
292	Krishi Kutani Pisani Rice Mill	Krishna Bahadur K.C	Male	B/C/T	Baglung	Bhimgithe
293	Kharel Fresh House	Jiblal Kharal Jaisi	Male	B/C/T	Baglung	Bhimgithe
294	Kismat Tailors	Yam Bahadur Darji	Male	Dalit	Baglung	Kandebas
295	Sumitra Rice Mill	Nara Bahadur Chhetri	Male	B/C/T	Baglung	Bhimgithe
296	Resham Kutani Pisani Mill	Lok Bahadur Khatri	Male	B/C/T	Baglung	Bhimgithe
297	Manisha Kutani Pisani Mill	Man Bahdur Shress	Male	Janajati	Baglung	Rangkhani
298	Ashmi Kutani Pisani Mill	Hari Bahadur Mahat Chhetri	Male	B/C/T	Gulmi	Musikot
299	Rudrawati Kutani Pisani Mill	Nara Bahadur Khatri	Male	B/C/T	Gulmi	Musikot
300	Sangam Fresh House	Bhagirath Ghimire	Male	B/C/T	Gulmi	Musikot
301	Lokshova Fresh House	Lok Bahadur Singh	Male	B/C/T	Gulmi	Musikot
302	Amrita Kut Pis Sewa Udhog	Dev Prasad Ghimire	Male	B/C/T	Gulmi	Neta
303	Wami Taksar Kutani Pisani Mill	Nara Bahadur Kugal	Male	B/C/T	Gulmi	Wami Taksar
304	Karishma Fresh House	Pomananda Kharel	Male	B/C/T	Gulmi	Neta
305	Malika Silai Center	Chunna Bahadur Damai	Male	Dalit	Gulmi	Wami Taksar
306	Sandesh and Subidha Tailors	Bhakta Bahadur Damai	Male	Dalit	Gulmi	Neta

307	Ashmita Furniture Udhyog	Man Prasad Shrestha	Male	Janajati	Gulmi	Wamitaksar
308	Star Furniture Udhyog	Laxman Fhuyel	Male	B/C/T	Gulmi	Wamitaksar
309	Buddha Furniture Udhyog	Man Ghale	Male	B/C/T	Manang	Chame
310	Sigdhathan Fresh House	Dil Bahadur Pun	Male	Janajati	Baglung	Pandabkhani
311	Shrees Pisani Mill	Jit Bahadur Shrees	Male	Janajati	Baglung	Rana Singh Kiteni
312	Bhupendra Aran Byawasaya Udhyog	Jitendra Kumar Shreepali	Male	Janajati	Baglung	Adhikarichaur
313	Shree Parishramik Krishi Sahakari Sanstha Ltd(Kutani Pisani Mill)	Dal Bahadur Bohora	Male	B/C/T	Gulmi	Neta
314	Annapurna Chauri Palan Kendra	Raju B.K	Male	Dalit	Manang	Manang
315	Shanta Tailoring Center Udhyog	Shanta Kumari Damai	Male	B/C/T	Manang	Dharapani
316	Sandesh Fresh House	Tirkasi Gurung	Female	Janajati	Manang	Dharapani
317	Bhu.Pu.Sainik Rice Mill	Laxman Karki	Male	B/C/T	Baglung	Devisthan
318	Barpak Sisno Powder Udhyog	Gham Rani Ghale	Female	Janajati	Gorkha	Barpak



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