NEPAL RENEWABLE ENERGY PROGRAMME

Renewable Energy Budget of Local Governments : Karnali Province

March 2021

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Acronyms

AEPC	Alternative Energy Promotion Centre
CA	Constitution Assembly
FEG	Fiscal Equalization Grant
FG	Federal Government
FY	Fiscal Year
GoN	Government of Nepal
HDI	Human Development Index
HPI	Human Pocerty Index
IS	Internal Source
IWM	Improved Water Mill
LG	Local Government
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MoPID	Ministry of Physical Infrastructure Development
M	Million
MW	Mega Watt
NEA	Nepal Electricity Authority
NNRFC	National Natural Resources and Fiscal Commission
NPC	National Planning Commission
NPR	Nepalese Rupees
NREP	Nepal Renewable Energy Programme
PG	Provincial Government
OD	Organisational Development
O & M	Organisational and Management
PECC	Provincial Energy Co-ordination Committee
PG	Provincial Government
RE	Renewable Energy
RM	Rural Municipalities
UM	Urban Municipalities
WRED	Water Resource and Energy Development

EXECUTIVE SUMMARY

The local government renewable energy (RE) budget analysis of Karnalii Province for FY 2077/78 intends to enable the local government (LG), Alternative Energy Promotion Centre (AEPC), and provincial government (PG) to understand the priority of Local Governments renewable energy choices and the trend of RE budget for three successive years. The report includes the budgets on RE allocated by local governments of Karnali province from the fiscal equalisation grant received from the federal government and provincial government as well as from their internal source. Data is derived from the Red books of local governments uploaded in their respective websites for fiscal year 2077/78.

Out of the total 79 LGs, only 23 local governments (7 UM and 16 RM) in FY 2077/78 had information on energy related budget in Redbook. The budget details are available in their annual development plan which were endorsed from municipal/rural municipal assembly.

Key findings:

a) In FY 2077/78, LGs have allocated budget in renewable energy activities ranging in between NPR 0.187 million to 33.579 million. The cumulative renewable energy budget comes out to be NPR 144.085 million.
b) Out of sampled local governments the renewable energy budget was highest in FY 2076/77. Comparing for the equal number of sampled local government; the renewable energy budget was found to be decreased by 40% in FY 2077/78. The possible reason might be due to priority shift into health sector for sub-national governments in FY 2077/78.
c) In first fiscal year the share of urban and rural municipalities in total renewable energy budget is found to be almost equal. However; in last two fiscal years the share of rural municipalities in total renewable energy budget is higher (i.e. above 50 %) in comaprision to share of urban municipalities (i.e. below 50 %).
d) Institutinal solar system is most populat RE choices among LGs and is chosen by two urban and eleven rural municipalities. Similarly, in terms of budget allocation for this activity, rural municipalities shares ninety percent of total budget compared to rural municipalities.
e) **Solar powered drinking water projects** are chosen by most of the rural municipalities (3 out of 5 LGs for this choice) and share 90% of total budgets for this choice compared to urban municipalities. However, it is interesting to note that **national grid powered lift irrigation or drinking water projects** are popular choice among urban municipalities.
f) NEA line extension for household electrification is chosen by almost equal number of urban and rural municipalities. Likewise, in budget allocation for this activity, both urban rural municipalities shares almost equal proportion.
g) Mini/micro-hydro projects are popular among rural municipalities while national grid powered drinking water projects are popular among urban municipalities in terms of budget allocation for RE activities choice.

1. BACKGROUND

1.1 INTRODUCTION

The Constitution of Nepal was formally promulgated, and it declared the country as a Federal Democratic Republic on September 20, 2015 with fiscal powers to be shared amongst the federal government (FG), the province governments (PG) and the local governments (LG). Under the federal context, responsibilities of LGs have increased as defined in Schedule 8 of the Constitution of Nepal. The Local Government Operation Act, 2074 that came into effect since 15 October 2017 has paved a strong legal foundation towards institutionalizing legislative, executive and quasi-judiciary practice of the local government. The Act has stipulated several arrangements related to authorities, duties and responsibilities of local government, assembly meeting and working system, assembly management procedures, plan formulation and implementation, judicial works, financial jurisdictions, administrative structure, and district assembly, among others. Without adversely affecting the universality of Schedule-8 of the Constitution, it clarifies the function, duties, and rights of municipalities/rural municipalities. The act clearly states that the local government can formulate, implement, monitor, evaluate and regulate local level policies, laws, standards, and plans related to hydro power projects up to one megawatt. Further, the municipality can manage, operate, and regulate local electricity distribution system and services. The roles were further made more specific and elaborated by the National Planning Commission Guideline, 2076, stating the LGs can implement and manage renewable energy (RE) projects up to 3 MW including RE in irrigation, drinking water, institutions and productive end uses.

The Constitution further defined the framework of fiscal federalism within the pattern of income and resource distribution; intergovernmental transfer modality being included in the Constitution. The National Natural Resources and Fiscal Commission (NNRFC) has been constituted at the federal level to make national level development plans and to recommend additional grants and loans for the sub national governments. Thus, the GoN on the recommendation of the NNRFC distributes fiscal equalisation grants (FEG) to the sub national governments based on their need for expenditures and revenue capacity. The province can also distribute FEGs to the local level falling under its domain from the grants obtained from the GoN and from its resources in accordance with the provincial law based on their need for expenditures and revenue capacity. The FEG is also allocated for programmes and projects related to infrastructure development that contribute to the balanced development of the relevant province.

Table 1: Karnalii Province – Key Statistics

Key indicators	Karnalii Province
Area	25,341 km^2
Population	▪ 1,555,956 ▪ UM: 774,319 & RM: 781,637
Households	▪ 302,174

	▪ UM: 156,748 & RM: 145,426
Electrification Status	34.75 %
Human Development Index (HDI)	0.469
No. of LGs	79
No. of urban municipalities (UM)	25
No. of rural municipalities (RM)	54
No. of wards	720 (UM Wards: 303 & RM Wards: 417)

1.2 OBJECTIVE

To exercise the mandates provided under schedule 8 of the Constitution of Nepal and further clarified by Local Government Operation Act, 2074 and elaborated by National Planning Commission Guideline, 2076; the LGs allocate budget on RE considering its geographical area, HDI, HPI and electrification status. The policies and plans prepared based on comprehensive analysis of past trends and volume of budget can play significant role in the LG's sustainable development of RE. Thus, this analysis is made with a few objectives as below:

- To Identify the RE priorities of LGs in terms of their budget allocation from FEGs and/or internal source (IS) budget.
- To find the trend of RE budget allocation by LGs in last three consecutive fiscal years.
- Compare RE priority activities and budgets between urban and rural municipalities.
- To infer areas of improvement while allocating RE budget at LG level.

1.3 METHODS INCLUDING KEY TERMINOLOGIES

This analysis report was prepared using the local government's Red Book published under website of concerned LGs for the fiscal year of 2077/78. Available data were summed up, averaged, brought into percentage and ratio, listed up, and other statistical method applied for analysis. Data is presented with the help of suitable graphs and charts.

1 **Agri-electrification**: Priority of LG which includes works such as purchase of transformer, electric pole, conductor for line electricity extension up to farm lands solely for irrigation purpose such as lift irrigation.

2 **Electricity line extension**: Priority of LG which includes works such as purchase of transformer, electric pole, conductor for line extension solely for residential purpose such as household electrification.

3 **Human Development Index (HDI)**: The HDI is a geometric mean of normalised indices for three dimensions of human development - Health is measured by life expectancy at birth; education is measured by mean of years of schooling for adult aged 25 years and more and expected years of schooling for children of school entering age; and standard

of living is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI[1].

4 **Internal source of revenue:** The revenue collected by LG themselves including local taxes, service charges, fees, rental income from buildings and facilities, interest income on municipal investment, and income from sale of municipal assets.

5 **Renewable Energy budget:** This document defines renewable energy budget are the specific budget allocated by the local governments for promotion, development and expansion of renewable energy as guided by the roles and responsibilities defined by the Constitution of Nepal 2015 and Local Government Operation Act 2017. Hence, this definition incorporates hydro up to 1 MW, distribution line up to 11 kV and other institutional and household renewable energy technologies and applications.

6 **Revenue distribution** is the method of distribution of budget that governments earn from Value Added Tax (VAT) and other taxes calculating the capacity of provincial and local governments contributing to the revenue.

7 **Matching fund:** Recipient government should finance specified (by law) percentage of expenditure share from their own sources within two types of norms - open ended (providing the matching fund without the limit) and close ended (matching the fund only up to a pre-specified limit).

[1] Taken from UNDP website, http://hdr.undp.org/en/content/human-development-index-hdi

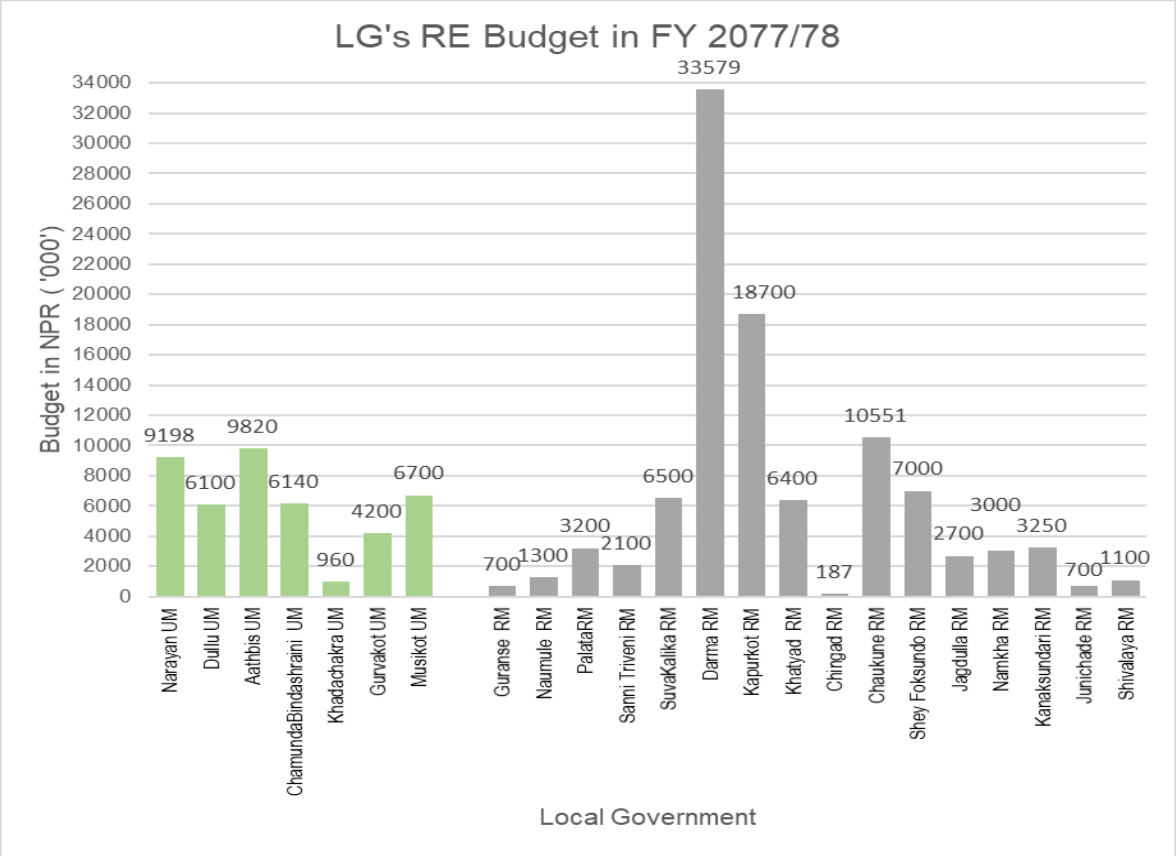
2. FINDINGS

This chapter contains details of RE budget allocated by LGs i.e. FEG and/or IS budget. Data collected refers to the budget allocated on energy related programs, infrastructure, RE and their productive uses. The data from FY 2077/78 were used to analyze renewable energy budget in current fiscal year while data from FY 2075/76 and FY 2076/77 were used for comparative analysis. Figures and charts are numbered for easy reference.

2.1 LOCAL GOVERNMENT'S RENEWABLE ENERGY BUDGET

Out of the total 79 LGs, only 23 local governments (7 UM and 16 RM) in FY 2077/78 had information on energy related budget in Redbook. The budget details are available in their annual development plan which were endorsed from municipal/rural municipal assembly. Among 25 LGs which have published their redbook on their website 23 local governments have information on RE budget. It was found that 30 LGs have just published the policy and programs and four LGs have uploaded budget speech only on their website for current fiscal year. However, it was found that 20 LGs did not have yet published their annual development programs and plan (Red book) on their website. Some LGs were found to have allocated RE/energy budget in bulk and thus they do not have disaggregated RE budget. Based on this information, the figure 1 below shows the budget of these sub-national government in RE/energy related activities.

Figure 1: Local Governments' Renewable Energy Budget in FY 2077/78



Some key notes of above:

a) In FY 2077/78, LGs have allocated budget in renewable energy activities ranging in between NPR 0.187 million to 33.579 million.
b) Amongst 23 sampled LGs; 7 urban municipalities have allocated renewable energy budget of NPR 43.118 million whereas 16 rural municipalities have allocated renewable energy budget of NPR 100.967 miilion. The cumulative renewable energy budget comes out to be NPR 144.085 million.
c) In an average urban municipalities have allocated RE budget of NPR 6.159 million whereas rural municipalities have allocated RE budget of NPR 6.310 million.

2.2 LOCAL GOVERNMENTS PRIORITIES IN RENEWABLE ENERGY

Local governments in Karnalii province have allocated budget for 11 different types of renenewable energy activities. They have chosen to allocate budget on RE activities such as mini/micro-hydro, water lifting for drinking water or irrigation, RE related training, household electrification and waste management. Based on this information, the figure 2 below shows the priority RE/energy related activities of the sub-national government in terms of budget.

Figure 2 : Local governments budget in RE Activities

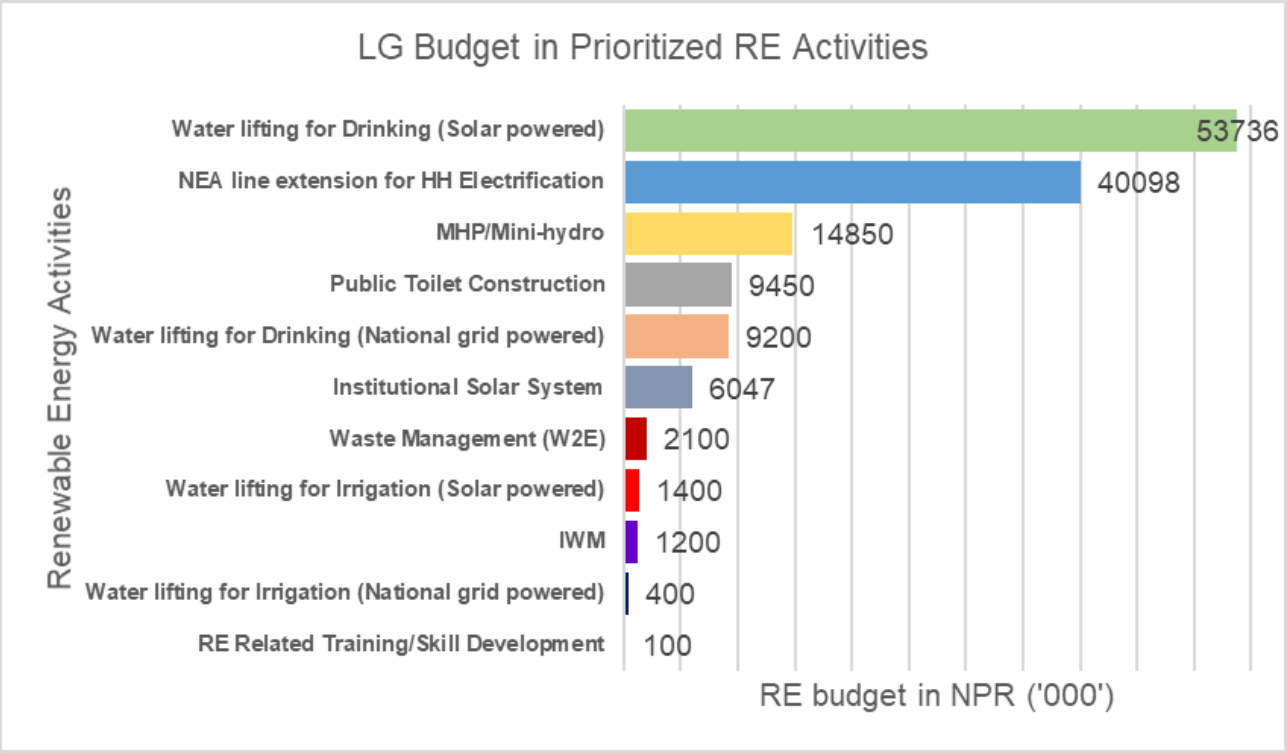


Table 2: Choice of LGs on Renewable energy activities

RE Activities	Number of LGs
Institutional Solar	13
NEA line extension for HH Electrification	9
Micro/Mini-Hydro	9

Public Toilet Construction	7
Water lifting for Drinking (Solar powered)	5
Improved Water Mill	3
Water lifting for Drinking (National grid powered)	2
Water lifting for Irrigation (Solar Powered)	2
Waste Management (W2E)	2
Water lifting for Irrigation (National grid powered)	1

Some key notes of above :

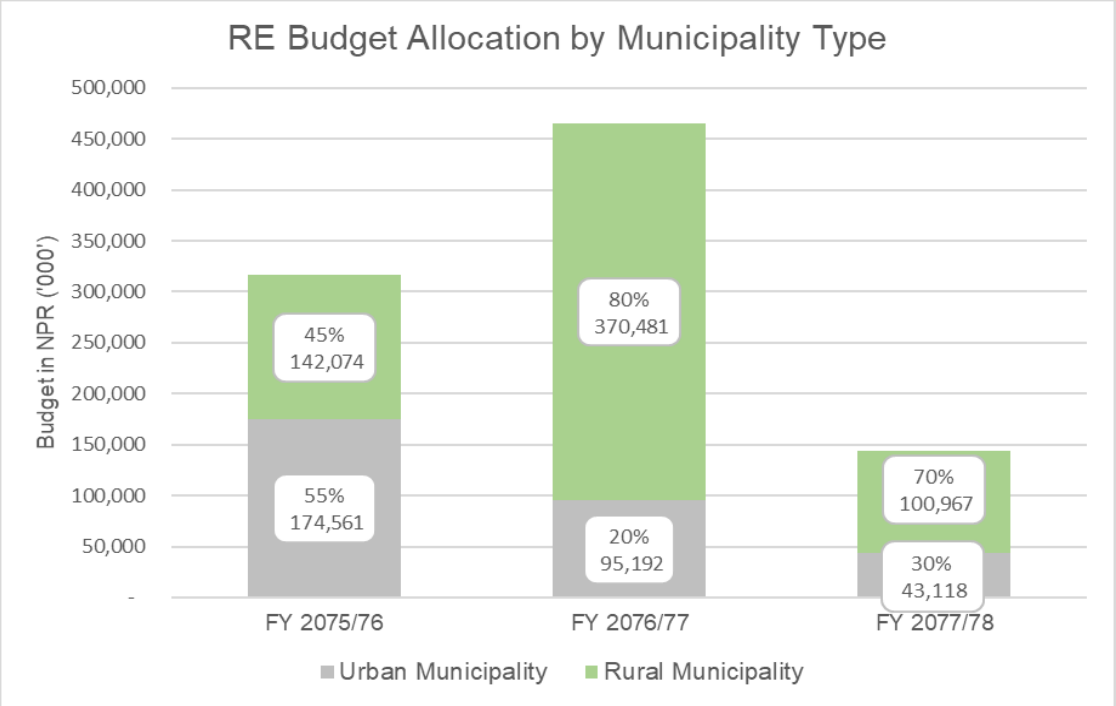
a) In FY 2077/78, institutional solar is the most popular as around 50 percent of the sampled LGs have allocated budget in this category, followed by household electrification by grid extension or mini/micro hydro (40%), solar powered drinking water (25%) and irrigation (10%) projects. Altogether around 15% of sampled LGs have allocated budget for national grid powered drinking water or irrigation projects. Waste management activities are emerging as new RE choices for local governments as around 10% of sampled LGs have allocated budget on this category. In general, the solar pumping projects have found to be paid least priority among other choices. The possible reasons might be due to low electrification accees of local governments in Karnlai province.

b) In terms of budget allocation it was found that 37% of total RE budget of sampled LGs has been allocated for solar powered drinking water projects followed by household electrification through national grid extension (28%), mini/micro-hydro projects (10%) and national grid powered water pumping projects (6.5%). However, it was found that just 4% of total RE budget of sampled LGs has been allocated for institutional solar whereas just 2 % of total budget has been allocated for waste management projects. Nominal budget of below 1% of total budget has been allocated for lift irrigation,improved water mill and RE related trainings.

2.3 TREND OF LOCAL GOVERNMENT'S RENEWABLE ENERGY BUDGET

This section provides a brief overview on share of urban and rural municipalities in total renewable energy budget and change in volume of renewable energy allocated by local governments in successive fiscal years based on renewable energy budget of sampled LGs available for different fiscal years. The information on renewable energy budget is available for 41 LGs in FY 2075/76, 42 LGs in FY 2076/77 while it is available for 23 LGs in FY 2077/78. Since the renewable energy budget of particular LGs might not be available for all three years, the disaggregated comparison of renewable energy budget might not be possible at this stage.

Figure 3 : RE budget allocation by municipality type in consecutive fiscal years



It can be seen that :

a) Out of sampled local governments the renewable energy budget was highest in FY 2076/77. Comparing for the equal number of sampled local government; the renewable energy budget was found to be decreased by 40% in FY 2077/78. The possible reason might be due to priority shift into health sector for sub-national governments in FY 2077/78.

b) In first fiscal year the share of urban and rural municipalities in total renewable energy budget is found to be almost equal. However; in last two fiscal years the share of rural municipalities in total renewable energy budget is higher (i.e. above 50 %) in comaprision to share of urban municipalities (i.e. below 50 %).

2.4 URBAN VS RURAL : RE CHOICE AND BUDGET SHARE IN PRIORITIZED RE ACTIVITIES

This section briefly describes the choices of urban municipalities compared to choices of rural municipalities amongst most popular seven RE activities out of 11 RE activities explained above in section 2.2. It also explains the share of urabn and rural municiplaities in budget of most popular seven RE activities (i.e. NEA line extension for HH electrification, National grid powered drinking water and irrigation projects, solar powered drinking water and irrigation projects, institutional solar system and Micro/mini-hydro projects.

Figure 4 : UM Vs RM ; Choice of RE Activities

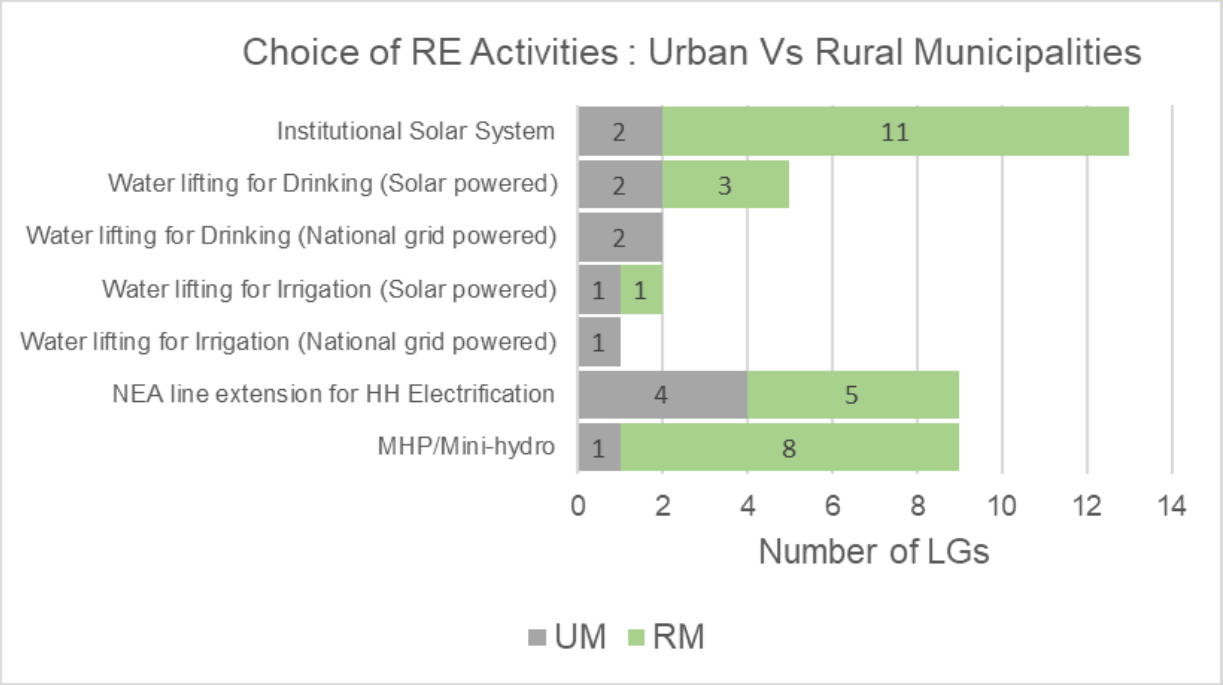
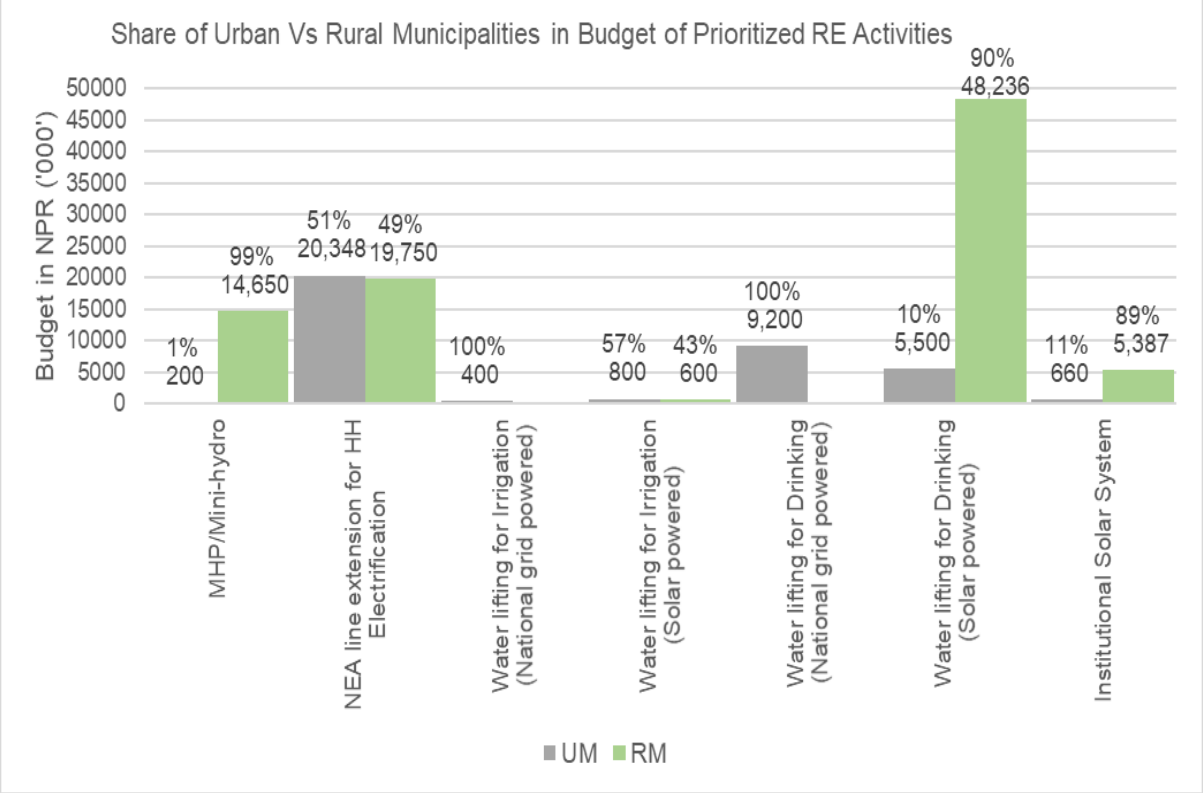


Figure 5 : UM Vs RM ; Share of Budget in Prioritized RE Activities



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c) NEA line extension for household electrification is chosen by almost equal number of urban and rural municipalities. Likewise in budget allocation for this activity, both urban rural municipalities shares almost equal proportion.
d) Mini/micro-hydro projects are popular among rural municipalities while national grid powered drinking water projects are popular among urban municipalities in terms of budget allocation for RE activities choices.

3. RECCOMENDATION

1) The study so far has found that below one-third of LGs have published their Red-Book on their website in current fiscal year. Thus, all LGs are recommended to publish their annual program and budget right after completion of seven steps planning process and endorsement of Red-Book from their municipal/rural assembly by the mid of July each year.
2) The LGs are mostly found to be focussing on small scale RE activities as per the budget. As they have mandate of planning, implementing and managing RE projects up to 1 MW, it is clear that this would not be an easy step to take but UMs in particular can be provided more support so that they can invest or finance larger RE projects up to 1 MW such as waste to energy, solar projects (land mounted or roof-top) and mini-hydro projects etc. This may in turn boost income for the LGs. For this, the budgets need to be significantly increased particularly from FEG or IS.
3) Opportunities for knowledge sharing, innovation and learning by inter LGs can also help to improve for development of RE and allocating the budget from FEG or IS.
4) Empowering Local government policy is essential to stimulate uptake of renewable energy technologies in rural areas, both on the supply and demand sides.
5) While materializing the renewable energy projects, it is recommended for local governments to focus on sustainable operation of RE projects rather than just quantifying RE projects each year.

Annexes

ANNEX 1: RENEWABALE ENERGY BUDGET OF LOCAL GOVERNEMNTS IN FY 2077/78

S.No.	Name of Palika	Type of Palika	District	MHP/Mini-hydro	NEA line extension for HH Electrification	Water lifting for Irrigation (National grid powered)	Water lifting for Irrigation (Solar powered)	Water lifting for Drinking (National grid powered)	Water lifting for Drinking (Solar powered)	Institutional Solar System	Biogas	Public Toilet Construction	Waste Management (W2E)	Biomass /ICS	IWM	Special Program (if any)	RE related policy	RE Related Training/ Skill Development	**Total**
1	Narayan Municipality	Urban M	Dailekh		3948000	400000		4200000				550000						100000	9198000
2	**Dullu Municipality**	Urban M	Dailekh		6100000														6100000
3	Aathbis Municipality	Urban M	Dailekh		9000000					360000	60000	200000		200000					9820000
4	ChamundaBindashraini Municipality	Urban M	Dailekh					5000000								1140000			6140000
5	**Guranse Rural Municipality**	Rural M	Dailekh							300000	200000			200000					700000
6	Naumule Rural Municipality	Rural M	Dailekh							1000000	300000								1300000
7	**Khadachakra Municipality**	Urban M	Kalikot									960000							960000
8	Palata Rural Municipality	Rural M	Kalikot	2500000						300000	200000			200000					3200000
9	Sanni Triveni Rural Municipality	Rural M	Kalikot	50000								2050000							2100000
10	SuvaKalika Rural Municipality	Rural M	Kalikot		6000000					500000									6500000
11	Darma Rural Municipality	Rural M	Salyan		6000000				26675000	300000	200000			200000			204000		33579000
12	Kapurkot Rural Municipality	Rural M	Salyan		4100000				13600000								1000000		18700000
13	Khatyad Rural Municipality	Rural M	Mugu	4500000			600000			1300000									6400000
14	Chingad Rural Municipality	Rural M	Surkhet							187000									187000
15	Chaukune Rural Municipality	Rural M	Surkhet	1700000					7961000	300000	200000	190000		200000					10551000
16	Gurvakot Municipality	Urban M	Surkhet		1300000		800000		1000000	300000	200000	400000		200000					4200000
17	Shey Foksundo Rural Municipality	Rural M	Dolpa	1900000								5100000							7000000
18	**Jagdulla Rural Municipality**	Rural M	Dolpa	900000	500000					600000				200000	500000				2700000
19	Namkha Rural Municipality	Rural M	Humla	2700000											300000				3000000
20	Kanaksundari Rural Municipality	Rural M	Jumla		3150000								100000						3250000
21	**Musikot Municipality**	Urban M	Rukum	200000					4500000				2000000						6700000
22	Junichade Rural Municipality	Rural M	Jajarkot							300000					400000				700000
23	Shivalaya Rural Municipality	Rural M	Jajarkot	400000						300000	200000			200000					1100000