

2019

Project Implementation Review (PIR)

**Renewable Energy RERL**

[Basic Data](#_Toc1)

[Overall Ratings](#_Toc2)

[Development Progress](#_Toc3)

[Implementation Progress](#_Toc4)

[Critical Risk Management](#_Toc5)

[Adjustments](#_Toc6)

[Ratings and Overall Assessments](#_Toc7)

[Gender](#_Toc8)

[Social and Environmental Standards](#_Toc9)

[Communicating Impact](#_Toc10)

[Partnerships](#_Toc11)

[Annex - Ratings Definitions](#_Toc12)

# Basic Data

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| **Project Information** | |
| UNDP PIMS ID | 4522 |
| GEF ID | 4345 |
| Title | Renewable Energy for Rural Livelihood (RERL) |
| Country(ies) | Nepal, Nepal |
| UNDP-GEF Technical Team | Energy, Infrastructure, Transport and Technology |
| Project Implementing Partner | Government |
| Joint Agencies | *(not set or not applicable)* |
| Project Type | Full Size |

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| **Project Description** |
| Nepal’s primary energy mix is dominated by traditional biomass (84%), contributing to net GHG emissions. About 40% of the rural population lacks access to electricity. When access is available, low system capacity limits use to lighting and other low power applications. While progress has been made in dissemination of off-grid renewable energy systems, issues of affordability of up-front costs of systems (due both to high costs and lack of capital), financial sustainability (due partly to low utilization), and technical capacity and awareness for less disseminated but high potential technologies constrain progress. RERL project will focus on community-scale power generating off-grid renewable energy technologies to promote income generating opportunities and a low-carbon development path in rural areas. Its core strategy will consist of four interrelated concepts: (1) promotion of larger-scale, less-disseminated systems, (2) achievement of private sector financing of up-front costs, (3) achievement of financial sustainability (cash flow for repairs and maintenance), and (4) establishment of productive use enterprises to raise system revenues and generate livelihood benefits. |

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| **Project Contacts** | |
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| Project Implementing Partner | Mr. Madhusudhan Adhikari (madhusudhan.adhikari@aepc.gov.np) |
| Other Partners | *(not set or not applicable)* |

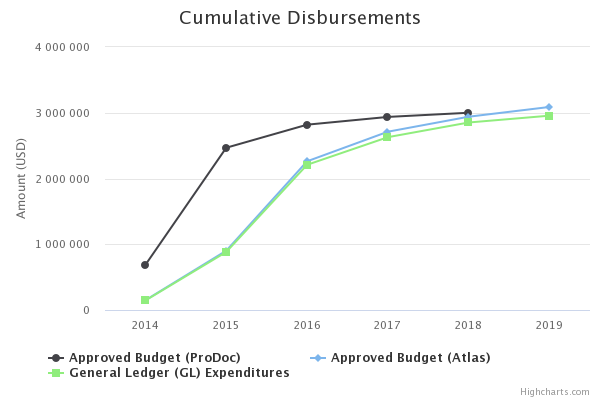
# Overall Ratings

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| Overall DO Rating | Satisfactory |
| Overall IP Rating | Satisfactory |
| Overall Risk Rating | High |

# Development Progress

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| **Description** | | | | | | |
| **Objective**  **Removal of barriers to increased utilization of renewable energy resources in rural Nepal in order to support economic, environmental, and social development of people in the rural areas and to reduce GHG emissions** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Total installed capacity of renewable energy-based power generation projects implemented by end-of-project (EOP), MW | 0 | *(not set or not applicable)* | 12.5  (This is comprised of 10 MW off-grid hydro (8 MW mini-hydro & 2 MW large micro-hydro); and 2.5 MW of large-scale solar PV system.) | Total Cumulative - 10.13MW    Total installed capacity (2018)– 4.93MW    Total Cumulative Solar: 1.95    Solar PV 2018 – 1.19MW  • 1MWp Captive Solar PV  • 6kWp Solar PV – Health Post  • 6kWp Solar Mini Grid – Kabilasi  • 1.5 Institutional Solar – School, Dhanusa  • 11.4kWp Relief & Rehabilitation  • 35kWp Solar/Wind Mini Grid -Ramite  • 70kWp Solar/Wind Mini Grid – Saptame  • 25kWp Solar/Wind Mini Grid- Olane  • 34.65kWp KfW PVPS    Total Micro Hydro Cumulative – 7.97    Micro Hydro 2018: 4.01MW  • 1.93MW - RERL TA & AEPC financial support (regular projects>60) 11,850 HHs & 84 employed  • 0.46MW RERL Relief & Rehabilitation 6,569 HHs &96 employed  • 1.62MW RERL TA & AEPC fund Relief & Rehabilitation 14,228HHs & 172 employed    Micro Hydro interconnected Mini Grid – 0.218MW | Total installed capacity as of June 2019 – 15.70 MW  • Mini Hydro – 0. 78 MW  • Large Micro Hydro (60kW+) – 3.9 MW  • Micro Hydro (Rehabilitation) – 3.1 MW  Large Scale Solar PV – 7.92 MW |
| Electricity generated annually for livelihood and quality of life improvement (GWh/yr) by the EOP. | 0 | *(not set or not applicable)* | 26.795  (This is comprised of 23.76GWh/year from additional mini-hydro, and 3.035GWh/year from large solar PV System.) | Total Cumulative -36.55GWh  • Solar PV - 2.75GWh  • MHP – 31.50GWh  • Mini Gird – 2.30GWh | Cumulative as of 20 July 2019 -177GWh  • Mini/Micro Hydro – 153.36GWh  • Mini Gird – 2.99GWh  • Large Scale Solar PV - 20.65GWh  Cumulative after 15 years will be 697.44GWh |
| Annual GHG emission avoided by EOP, tCO2/year | 0 | *(not set or not applicable)* | 35,375 | Total Cumulative – 29,702tCO2  • Solar – 2741tCO2  • Micro Hydro – 25,123tCO2  • Mini Grid – 1,838tCO2 | Cumulative as of 20 July 2019 – 54,028tCO2  • Mini/Micro Hydro – 31,082tCO2  • Mini Grid – 2,391tCO2    Large Scale Solar PV – 20,554tCO2    Cumulative in project life time of 15 years will be 586,795tCO2 |
| No. of households benefitting from lighting, productive end-use services and employment due to electricity supply by EOP | 0 | *(not set or not applicable)* | 50,000 | Total beneficiary– 58,273 HHs    Total beneficiary households Lighting (2018)– 32,647 HHs  • RERL TA & AEPC financial support (regular projects>60) 11,850 HHs  • RERL Relief & Rehabilitation 6,569 HHs  • RERL TA & AEPC fund Relief & Rehabilitation 14,228HHs | Total beneficiary– 357,993 HHs  • Mini Hydro – 5,936  • Micro Hydro (60kW+) – 31,444  • Rehab Micro Hydro – 15,510  • Large Scale Solar PV – 305,103  Indirect beneficiaries from EQ and post demonstration projects are not included |
| **The progress of the objective can be described as:** | | **Achieved** | | | | |
| **Outcome 1**  **Strengthened legal, institutional and policy environment to support RE and other low-carbon technology development & utilization** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| No. of RE-based power generation projects that were proposed and developed as influenced by the strengthened policy regime on RE and low carbon development by EOP | 0  (Existing RE policy has no provision for mini-hydro and large scale solar PV development) | *(not set or not applicable)* | 50 | 96, which was achieved in 2017 | Total - 594  Mini Hydro-2  MHP (60kW+)-6  Solar Mini Grid - 3  Solar PV Pumping – 191  Institutional Solar Power Systems – 392 AEPC    Does not include post demonstration projects |
| No. of district energy plans developed that include mini-hydro and large scale solar PV power generation installations by Year 3 | 0 | *(not set or not applicable)* | 15 | The Constitution of Nepal 2015 envisages a federal governance system with 3 tiered governments viz. Federal, Provincial & Municipal. All responsibilities related to small scale renewable energy and hydro power is with the municipalities. RERL had prepared methodology and 1 District Energy Master Plan. Based on the methodology RERL is helping municipalities to prepare Municipal Energy Plan (MEP). In this reporting period, RERL has helped to draft 2 MEPs.    • Palungtar Municipality, Gorkha  • Mahankal Rural Municipality, Lalitpur | Total Municipal Energy Plan – 23  • RERL – 7  • RERA/GIZ - 16  In the changed federal context municipalities are responsible for development planning including energy |
| No. of policies and legal frameworks that are supportive of RE-based energy production were approved and enforced by Year 3 | 0 | *(not set or not applicable)* | 2 | RERL has helped draft 4 policies and legal frameworks  • Local Government Operation Act.  • RE mainstreamed in “White Paper produce by Ministry of Energy Water, Resources and Irrigation”  • Renewable Energy Development Board Act  • Renewable Energy Subsidy Policy  • RE Subsidy Delivery Mechanism 2016 approved by Ministry of Population and Environment (MoPE) | RERL has helped draft 6 policies and legal frameworks  • Local Government Operation Act 2017  • RE mainstreamed in “White Paper produce by Ministry of Energy Water, Resources and Irrigation”  • Renewable Energy Development Board Act  • Renewable Energy Subsidy Policy  RE Subsidy Delivery Mechanism 2016 |
| **The progress of the objective can be described as:** | | **Achieved** | | | | |
| **Outcome 2**  **Increased investments in RE** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| No. of local financial institutions that provide loans for feasible RE-based energy projects in the remote areas of Nepal by Year 3 | 3 | *(not set or not applicable)* | 10 | 14 (11 Banks, 2MFIs 1 Cooperative) | Total cumulative: 23 BFIs  Civil Bank, NIBL, ADBN, NMB, Machhapuchhre  Prabhu Bank, Sahara Cooperative, 14 Small Farmers Cooperative, CYC Coop, Baglung, Simrutu Cooperative |
| No. of RE-based energy projects developed and proposed for financing from local financial institutions by EOP | 0 | *(not set or not applicable)* | 50 | Total 44 RE Projects  2018: 3 Mini Hydro  • Khatyad Khola  • Patrasi Chukeni Khola  • Ghami Khola | As of June 2019  Total - 601  • Mini Hydro\*- 9  • MHP (60kW+) - 6  • Solar Mini Grid - 3  • Solar PV Pumping – 191  • Institutional Solar Power Systems (ISPS) – 392  \*Only projects that have achieved financial closure included |
| Total installed large RE-based power generation capacity funded by local financial institutions by EOP, MW | 0 | *(not set or not applicable)* | 1.8  (1 MW mini-hydro; 0.5 MW large-scale solar PV; and, 300 kW mini-grid project) | Total cumulative installed capacity – 10.25MW  Total 2018: 5.32MW  • 1.58MW Mini Hydro (Tara Khola 380, Simrutu Khola 200, Giri Khola 200, Phawa Khola 500, Junbeshi Khola 300) – equity, grant & loan  • 2.54MW Micro Hydro – Equity & Grant + EQ Rehabilitation  • 1.2MW Solar PV – Equity, Grant & Loan + EQ Rehabilitation | Total installed capacity as of June 2019 – 16.2 MW  • Mini/Micro Hydro – 7.78 MW  • Large Solar PV – 7.92 MW  • Mini Grid – 544 kW |
| Total installed capacity of renewable energy-based power generation projects achieving financial closure by end-of-project (EOP), MW | 0 | *(not set or not applicable)* | 12.5 | Total Cumulative: 5.32MW  • 1.58MW Mini Hydro (Tara Khola 380, Simrutu Khola 200, Giri Khola 200, Phawa Khola 500, Junbeshi Khola 300) – equity, grant & loan  • 2.54MW Micro Hydro – Equity & Grant + EQ Rehabilitation  • 1.2MW Solar PV – Equity, Grant & Loan + EQ Rehabilitation | Total installed capacity EOP – 20.82 MW  • Mini Hydro – 9 MW  o 8 additional mini hydro projects in pipeline – 4.7 MW (not included in total)  • Large Solar PV – 7.92 MW  • Large Micro Hydro (60kW+) – 3.9 MW    EOP is 15 years after project completion |
| **The progress of the objective can be described as:** | | **Achieved** | | | | |
| **Outcome 3**  **Improved availability of financial investment supports for rural RE and other low-carbon technology applications** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| No. of RE financial instruments developed, funded and operationalized by EOP | 0 | *(not set or not applicable)* | 2 | All Financial Instrument developed and operationalized in 2016/17 | Total types of Financial Instruments – 6  • Credit Guarantee  • Soft Credit  • Vendor Financing  • Vendor Challenge Fund  • Project Insurance  • . LFI/MFI Financing |
| No. of local financial institutions implementing the new RE financial instruments and have RE loan portfolios by EOP | 0 | *(not set or not applicable)* | 10 | Total cumulative: 14 Banks    2018: 4 Banks  • 4 Banks – Machhapuchhare, Sunrise, Laxmi & Century (2018) | Total cumulative: 23 BFIs  ¥ Civil Bank  ¥ NIBL  ¥ ADBN  ¥ NMB  ¥ Machhapuchhre  ¥ Prabhu Bank  ¥ Sahara Coop  ¥ 14 Small Farmers Coop  ¥ CYC Coop, Baglung  ¥ Simrutu Coop |
| **The progress of the objective can be described as:** | | **Achieved** | | | | |
| **Outcome 4**  **Improved design and packaging of investment support mechanisms for rural RE and other low-carbon technology applications** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| No. of new and improved RE financial instruments for supporting rural RE and low carbon technology applications designed by EOP | 0 | *(not set or not applicable)* | 2 | All Financial Instrument designed in 2016/17 | Total Financial Instrument – 6  • Credit Guarantee  • Soft Credit  • Vendor Financing  • Vendor Challenge Fund  • Project Insurance  • . LFI/MFI Financing |
| Total amount of funds allocated by the GoN and the local financial sector for the new RE financial instruments by EOP, US$ million | 0 | *(not set or not applicable)* | 30.25 | Total Cumulative - USD 48.85 M    Subsidy:  • AEPC/GoN – USD 25M  • AEPC/KfW – USD 5.85 M(Euro 5M)  • ADB/SASEC – USD 10 M    Soft Loan:  • AEPC/ADB/SASEC – USD 5 M  • NRREP – USD 2.3 M    Interest Subsidy:  GoN – USD 0.7 M | Total as of June 2019 - USD 81.92M  • GON – 39.95M  • Local Government – 4.08M  • Private Community – 18.52M  Others – 19.37M |
| Total load factor including contribution of productive use by EOP | 0 | *(not set or not applicable)* | 50 | 25 | 30  As construction of mini hydro projects would take time, RERL inception workshop agreed to carry out productive end use promotion activities in MHPs. The plant load factor of MHPs range from a few percent to more than 70%. The CDM meters show an average of 30%. Whereas, given the load centers of RERL /SASEC supported mini hydro projects, the plant load factor is expected to be significantly more. |
| No. of productive use enterprises from RE projects funded through the new RE financing instruments by EOP | 0 | *(not set or not applicable)* | 300 | Total 1277 MSME established and 151 trained on business management    2018:  • 95 MSME established  • 29 women trained on Business Management | Total Productive Use Enterprises – 2543  • AEPC Subsidy – 1480  Without Subsidy - 1063 (RERL Survey) |
| **The progress of the objective can be described as:** | | **Achieved** | | | | |
| **Outcome 5**  **Enhanced capacities and skills of various stakeholders in the RE sector** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| No. of persons trained on survey and design of mini hydro, large micro hydro and large scale solar PV systems by EOP | 0 | *(not set or not applicable)* | 10 | Total Cumulative: 171 engineers trained on survey and design    2018: 66 engineers  • 66 engineers trained on field level monitoring | 168 engineers  EOP target should be 100 |
| No. of local engineering firms trained for manufacture, fabrication and repair maintenance of mini hydro, large micro hydro and large scale solar PV system by EOP | 0 | *(not set or not applicable)* | 5 | Total Cumulative: 5 local engineering firms trained    • 2 local firms have capacity for design, fabrication, system integration, installation and repair and maintenance of control and protection systems for grid interconnection and mini grid with RERL TA (Preesu Electronics and Techno Village) | 8 |
| No. of persons trained for installation of mini hydro, large micro hydro and large scale solar PV systems by EOP | 0 | *(not set or not applicable)* | 5 | Total Cumulative: 104    2018: 27 private sector technicians trained    • 25 people trained as Solar Technicians  • 2 Private Sector engineers were provided on-the-job training on installation of control and protection systems for grid interconnection of MHP and mini grid | 215  EOP target should be 100 |
| No. of persons trained for operation of mini hydro, large micro hydro and large scale solar PV systems by EOP | 0 | *(not set or not applicable)* | 5 | Total Cumulative – 659 people trained    2018: 444 people trained  • 46 Operators trained on operation of MHP  • 48 MHP Managers trained on Computerized Billing System  • 350 people provided on-the-job training on operation of solar PV systems | 563  EOP target should be 300 |
| **The progress of the objective can be described as:** | | **Achieved** | | | | |

# Implementation Progress



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| Cumulative GL delivery against total approved amount (in prodoc): | 98.52% |
| Cumulative GL delivery against expected delivery as of this year: | 98.52% |
| Cumulative disbursement as of 30 June (note: amount to be updated in late August): | 2,955,719 |

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| **Key Financing Amounts** | |
| PPG Amount | 63,000 |
| GEF Grant Amount | 3,000,000 |
| Co-financing | 32,312,500 |

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| **Key Project Dates** | |
| PIF Approval Date | Jun 1, 2012 |
| CEO Endorsement Date | Mar 5, 2014 |
| Project Document Signature Date (project start date): | Jul 21, 2014 |
| Date of Inception Workshop | Mar 13, 2015 |
| Expected Date of Mid-term Review | Jan 21, 2017 |
| Actual Date of Mid-term Review | Jan 30, 2017 |
| Expected Date of Terminal Evaluation | Apr 21, 2019 |
| Original Planned Closing Date | Jul 21, 2019 |
| Revised Planned Closing Date | *(not set or not applicable)* |

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| **Dates of Project Steering Committee/Board Meetings during reporting period (30 June 2018 to 1 July 2019)** |
| 2018-10-12 |
| 2018-12-21 |
| 2019-05-11 |
| 2019-07-15 |

# Critical Risk Management

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| Current Types of Critical Risks | Critical risk management measures undertaken this reporting period |
| Financial | Some of the risks perceived by commercial banks and financing institutions remain. On the one hand, the banks and FIs consider remote rural off-grid project as high risk and on the other they have very limited experience in funding smaller hydropower projects (    RERL has supported CREF to establish & operationalize innovative financial instruments including ‘Credit Guarantee’ to mitigate risk, which has helped attain financial closure of 6 Mini Hydro projects. This mechanism needs to be continued until BFIs have confidence in remote rural off grid projects.  Recent GoN's decision to establish at least one commercial bank in all 746 municipalities has helped BFIs to look for investment opportunities in rural areas. Some BFIs are now looking at RE projects as a potential area to invest.  CREF/AEPC/RERL lobbied with Nepal Rastra Bank (NRB), the Central Bank of Nepal to increase the amount of investment in RE projects from NRP. 20M to NRP 50M to be considered as the mandatory Deprived Sector Lending (DSL). |
| Political | New constitution gives right to develop renewable energy & Mini Hydro to municipalities, which have only recently been elected & have limited capacity. This has delayed project activities to some extent. To mitigate this situation, RERL and AEPC carried out several orientation programmes for newly elected officials. As a result, municipalities have started providing financial assistance as investment in most of the Mini Hydro Projects. |
| Organizational | RERL Project Document listed lack of funding from National Rural Renewable Energy Programme (NRREP) for mini hydro and large scale solar PV systems as a potential risk. Before the closure of NRREP in July 2017, AEPC & ADB initiated South Asia Sub-regional Economic Cooperation (SASEC) project to develop Mini Hydro (4.3MW) & Solar Mini Grid (500kW) projects in 2016 and RERL has been working closely with SASEC to achieve its targets. RERL’s technical assistance to SASEC includes project identification, feasibility studies, detailed engineering design, support for institution establishment and financial closure, construction supervision, capacity development for operation and management and productive end use promotion. SASEC on the other hand is providing both subsidy & credit to complete these projects. Some of RERL’s demonstration targets for Mini Hydro (1MW) and Solar Mini Grid (0.5MW), have been met through SASEC projects.    Similarly, RERL worked with different other organizations to achieve some of its targets. For example, RERL supported to install 50 KfW funded solar PV pumping projects and Nepal Army, District Health Offices, UNICEF and SNV to install 15 Institutional Solar PV Systems in snake bite treatment centers and birthing and health centers.  In addition, RERL supported to develop 2 MHP interconnected Mini Grids in Gulmi & Taplejung districts. The Gulmi Mini Grid Project was funded by WISION and Fraunhofer ISE, Germany and the Taplejung Mini Grid was developed with the World Bank and GoN fund.  This way, RERL was able to meet all of its targets\* with financial assistance from different organizations in spite of the fact that the baseline project NRREP provided fund only for micro hydropower projects and institutional solar PV systems.  \*1MW mini hydro demonstration target will be completed before the end of the year. |
| Regulatory | The Renewable Energy Subsidy Policy 2016 and Subsidy Delivery Mechanisms were approved by the government in 2016.   RERL provided critical inputs to draft a favorable policy towards private sector involvement, energy service provision and less cumbersome implementation modality. The approved policy has created a more conducive environment for dissemination of larger systems through private participation by removing a major regulatory bottleneck. Many issues of grid connection have also been resolved from the project perspective through successful PPA negotiation for grid connection of 4 micro hydropower plants as well as finalization of grid connection guidelines and technical specifications.  In the changed federal context, mandate for promotion of renewable energy has been given to all 3 levels of governments and the federal Ministry of Energy, Water Resources and Irrigation (MOEWRI) came up with The White Paper in 2018 which mainstreams renewable energy not only as a temporary solution for far flung areas but also as an indigenous resource for both permanent solution for off grid areas and a means for achieving energy security by reducing import of fossil fuels. |

# Adjustments

**Comments on delays in key project milestones**

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| **Project Manager: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.** |
| Terminal Evaluation delayed due to delay in selection of national consultant. Qualified person was not found from call for proposal. |

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| **Country Office: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.** |
| The main delay was in concluding the Terminal Evaluation. The delay was caused by the repeated process of selecting the national consultant to conduct the terminal evaluation. This delayed the entire process by 1 month. |

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| **UNDP-GEF Technical Adviser: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.** |
| Note the delay. |

# Ratings and Overall Assessments

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| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Project Manager/Coordinator** | Highly Satisfactory | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | As this is the final Project Implementation Report (PIR), the outcome wise assessment is done for the whole project period.    Outcome 1  A significant progress towards mainstreaming renewable energy in Nepal was made when AEPC was brought under jurisdiction of Ministry of Energy, Water Resources and Irrigation (MOEWRI) in 2018 and to give it autonomy AEPC Bill has been drafted. The White Paper published by the MoEWRI in 2018 is an evidence of renewable energy (RE) being mainstreamed into the overall energy sector of Nepal. This step has helped RE / off-grid renewable energy to be established as the only solution for far flung areas that cannot be served by the Integrated Nepal Power System (INPS), the national electricity grid, anytime soon.  RERL’s inputs in the White Paper include electric cooking, carbon tax on fossil fuel to support RE promotion, which is also reflected in the Approach Paper of the Fifteenth Five Year’s Plan. Other concepts included in the Approach Paper are commercial operation of MHPs and post-installation support and institutionalizing Municipal Energy Plan preparation. RERL also helped prepare supporting documents for establishing AEPC as a “Centre of Excellence” for RE in Nepal.    In order to widen the reach of renewable energy in Nepal, AEPC prepared new RE subsidy policy and delivery mechanism in 2016. The policy will help reduce the initial upfront cost of renewable energy and productive end uses for beneficiaries, inject credit into the renewable energy sector, encourage private sector participation as well as improve access to cleaner and modern energy services benefitting particularly women, vulnerable communities and socially excluded groups. The new policy envisages gradually replacing subsidy by credit in the long-term. Similarly, it focuses on further scaling-up of RETs and achieving “Sustainable Development Goals 7” of providing access to clean, reliable, affordable modern energy services to all by 2030. The new policy opens up space for private sector investment in RE projects by creating an opportunity for subsidizing services instead of only equipment, which is expected to lead towards greater efficiency and sustainability. Furthermore, the RE Subsidy Policy 2016 introduces the concept of Best Available Technology (BAT), which is defined as the least cost option for a given energy services. Least cost option takes into consideration the lifetime cost of all available technological options; not only the upfront cost but also operation and maintenance cost, insurance, cost for replacement /renovation, efficiency and losses, etc.    The Constitution of Nepal 2015 envisages a three-tiered federal governance structure viz. federal, provincial and local governments. The constitution mandates local governments to develop renewable energy (RE) and hydropower projects up to 1000 kW. However, local governments have limited technical and managerial capacities to effectively carry out their roles related to RE and require extensive support for sometimes.    RERL extensively helped AEPC to reposition itself by drafting its Transition Paper detailing roles and responsibilities in the changed context. RERL also helped to detail out the roles and responsibilities of municipalities in promotion of renewable energy and hydro power up to 1000 kW which are clearly enshrined in the Local Government Operation Act 2017. RERL also helped AEPC to prepare its support package for Local and Provincial Government for promotion of RE in Nepal and organize orientations to officials of provincial governments and municipalities in Provinces 1, 2, 4, 6 and 7.    Likewise, RERL worked closely with Palungtar Municipality, Gorkha and Mahankal Rural Municipality to prepare Municipal Energy Plan (MEP) with focus on domestic uses such as clean cooking, lighting and operating household appliances, community systems for street lighting, community centers, schools and health centers and productive uses. Based on the experiences, RERL received demand from 11 municipalities for Provinces 2, 3 and 4 to prepare their MEPs and have allocated NPR. 1,800,000. The methodology thus developed has been adopted by GIZ supported Renewable Energy for Rural Area (RERA) project to prepare MEP of 14 municipalities of Provinces 1 and 7    RERL played key role in developing standards for grid interconnection of both mini/micro hydropower projects and larger solar PV systems which were approved by the government. So far, 4 MHP and 5 solar PV systems have been grid connected with AEPC support. Further, RERL prepared guidelines for development of Utility Scale Solar PV Projects which was recently approved by MOEWRI.    Outcome 2  To increase investment in RE projects with demonstration of technically sound and financially viable 1.5MW of mini hydropower projects and large solar PV systems, RERL has been working with Central Renewable Energy Fund (CREF) of AEPC to establish financial instruments such as credit guarantee, soft credit, vendor financing, vendor challenge fund, credit insurance, etc. to attract private investment in renewable energy projects.    Mini Hydro  With RERL support 6 mini hydro projects with the total capacity of almost 3MW (200kW Simrutu, 200kW Giri, 380kW Tara Khola, 500kW Khatyad Khola, 200kW Bom Khola, 500kW Phawa Khola and 998kW Patrasi Khola) were able to achieved financial closure. In this arrangement, SASEC/ADB provided financial assistance (both loan and subsidy) to develop these projects except Tara Khola MHP which managed to achieve financial closure with loan from local financial institution (LFI). RERL has been providing technical assistance not only to achieve financial closure but also for feasibility study, formation and capacity strengthening of SPV, construction supervision etc. Further, RERL has already initiated post installation activities to promote productive energy use in 3 mini hydro projects. So far, mini hydro projects with total capacity of 780kW (200kW Juddi Khola, 200kW Simrutu Khola and 380kW Tara Khola MHP) have been completed and 200kW Giri Khola and 500kW Phawa Khola are expected to be completed by the end of the year. Delay in completion of mini hydro projects is mainly due to long time required for financial closure as BFIs are still reluctant to invest in community owned projects in rural areas, construction time overruns due to earthquakes and frequent natural calamities, border blocked and lack of experience of contractor in mini hydro project construction. To avoid similar situation in up coming projects, RERL is providing support to strengthen management capacity of Hydro Energy Concern Pvt. Ltd., the lead contractor of 3 projects.  RERL has supported AEPC to carry out 13.58 MW feasibility studies (PFS and DFS), out of which 2.7MW (700kW Aakhe, 1000kW Saniveri, 1000kW Hepka)will be developed by SASEC with RERL technical support (GoN has requested ADB to continue RERL TA beyond July 2019\*) and 2.5MW (500kW Gami, 1000kW Manjo and 1000kW Pangboche) will be developed by Nepal Mini Grid Project of AEPC and the World Bank. In this way, RERL’s total target including post project target of 7MW mini hydro will be achieved.  \*Given the quality of support provided by RERL to SASEC mini hydro and solar mini grid projects, AEPC and GoN requested ADB to continue the support even after the closure of GEF UNDP funded RERL project in July 2019. ADB has agreed to AEPC/GoN request to continue RERL support through UNDP until the end of SASEC project in December 2021.    Mini Grid  With financial assistance of AEPC/GoN and the World Bank, RERL supported 5 MHPs in Taplejung district to interconnect and supply electricity to deficit area from surplus plants. After the 500kW Phawa Khola MHP is completed it will also be connected to the system and the whole system will be interconnected with the grid. Earlier, AEPC/RERL had mobilized financial resource to interconnect 2 MHPs in Gulmi district. So far, 7 MHPs with total capacity of 544kW have been interconnected in 2 systems.  RERL played crucial role in developing technology required for interconnection. RERL supported Preesu Electronics, the leading load control fabricator in Nepal to import digital load controller with droop characteristic which can also be used for grid connection of individual MHP. Using the same technology, Preesu Electronics and Techno Village Pvt. Ltd. directly interconnected 4 MHPs to the grid for the first time in Nepal. This paved way for interconnection of hundreds of MHPs in future.    Micro Hydro  Against the target of 2MW of large MHP (60kW+) given by the project document, RERL was able to support AEPC and the communities to install or rehabilitate 7 MW during the project period.    Large Solar PV  RERL provided technical and financial assistance to promote large solar PV systems such as solar mini grid for lighting and productive uses, institutional solar for health and solar pumping for water supply and irrigation in Nepal.  In 2018 and 2019, RERL provided technical assistance to AEPC to install 50 photo voltaic pumping systems funded by KfW. RERL support included demand collection, feasibility study, Environment and Social Safeguard screening, design and installation. These projects are primarily for providing water supply for drinking and household uses. Moreover, RERL worked with CREF to establish and operationalize Vendor Financing Mechanism to promote household size solar irrigation systems. Under this financing mechanism, SunFarmer installed 36 such systems. Further, RERL, CREF and UNCDF collaborated to establish Vendor Challenge Fund and supported 7 larger solar pumping plants to supply water for aquaculture. After successful demonstration of solar irrigation and water supply projects under different financing models and implementation arrangement such as public private partnership and community private partnership, RERL had strongly advocated for providing subsidy to solar irrigation projects too. As a result, in 2018 and 2019, AEPC allocated fund to develop almost 1000 household size solar irrigation systems.  With financial support from different agencies mainly ADB, AEPC and UNDP, RERL provided technical support to install 15 solar mini grids with total installed capacity of 457.6kWp directly benefiting 6000 households. The larger projects were financially supported mainly by SASEC/ADB. Solar mini grid technology is relatively new to Nepal.  Based on the remarkable impacts of solar PV back up system in health centers, supported by RERL under “energy for health”, UNDP provided additional financial assistance in 2018 to install solar back up systems in 6 Snake Bite Treatment Centers operated by the Nepal Army, 4 Birthing Centers established with UNICEF funding in Mugu district, 5 health posts in Surkhet, Makawanpur, Rukum and Salyan districts that provide services to about 60,000 households. The solar PV back up systems provide uninterrupted power supply to store anti-snake venom and other vaccines and operate medical equipment. The birthing centers were unable to provide services due to lack of power supply even though they were fully equipped.    Outcome 3  RERL carried out a study to understand risk averseness of banks and financial institutions (BFIs) to invest in renewable energy projects in rural areas. The study clearly showed that the BFIs consider community owned and managed project in general to be highly risky and investment in rural areas to be administratively burdensome. To address BFI’s perception RERL in close collaboration of CREF undertook several de-risking measures including design and establishment of financial instruments such as;  o Credit Guarantee  o Soft Credit  o Vendor Financing  o Vendor Challenge Fund  o Project Insurance  o Local Financial Institution/Micro Finance Institution (LFI/MFI) lending  The partial credit guarantee mechanism in particular has been crucial to achieve financial closure of mini hydropower projects, whereas Vendor Financing and Vendor Challenge Fund have been utilized to promote small scale systems like solar pumping and solar home systems. Beside innovative financial instruments, RERL also organized training/orientation for BFIs on mini hydro and large solar PV systems, field visits and “match making” events to attract financing for RE projects. 23 BFIs have lent to RE projects after the efforts of RERL, AEPC, CREF and other partners.  Under Outcome 3, RERL had to demonstrate financial viability of larger RE projects to attract private investment by increased plant load factor. As construction period of mini hydropower projects is quite long, it was agreed during the inception workshop that most of RERL support for promoting productive energy uses would be limited to micro hydro.  To encourage fuel switching from firewood to electricity in rural enterprises, RERL modified, adapted and field tested several technologies to suit the local context. In this regard, RERL partnered with academic institutions and local workshops/fabricators to modify allo/lokta boiler, lokta paper dryer, cardamom/ginger/tea dryer and nettle leaves dryer. The pressurized Allo/lokta boiler developed by Pokhara University was well liked by entrepreneurs.  First, a modality for “Commercial Operation” of MHPs was developed and tried at the 83kW Darna MHP, Achham district, one of the poorest districts in Nepal. The commercial operation includes institution strengthening to ensure accountability, computerized financial management for transparency and efficiency promotion of productive end uses for revenue generation. RERL supported the community to mobilize resources to build 11kV line to export 25kW electricity to neighboring Kalagaun village. After the intervention, monthly revenue collection of Darna MHP increased from NPR. 36,000 to 80,000 on an average. RERL supported 25 other MHPs for commercial operation through different management modalities like cooperative, community owned and privately managed, public private partnership, etc. as chosen by the community.  To ensure that women and members of marginalized groups directly take advantage of access to electricity, RERL facilitated to engage them in monthly saving and credit activities so that they have income not only to pay for electricity but also the establish micro, small and medium scale enterprises (MSME).  Outcome 4  RERL’s support to enhanced capacities at all levels for promotion of less disseminated renewable energy technologies such as mini hydro, large micro hydro, mini grid and large solar PV continued in 2019 as discussed briefly below;  Computerized Financial Management: To enhance efficiency and ensure transparency in revenue collection and financial transitions of mini/micro hydro projects RERL has been providing training on computerized accounting system and management for managers .It is expected that this training will help improve financial management of MHP including accounting and book keeping. Training was also provided on demand collection and subsidy processing for Productive Energy Uses (PEU) promotion. Altogether 20 participants including 2 women participated.  Mini/Micro Hydro Operation: A 15 days long training on the “Mini/Micro Hydro Operation” in Surkhet to build up the capacity of operators for trouble shooting and smooth operation and minor repair works. Altogether 24 operators received both practical skills and theoretical knowledge on various aspects of micro/mini hydro operation, management, electricity distribution and regular maintenance. The training was provided both professionals and operator and manager of a MHP. This decentralized training approach not only help reduce cost of travel and accommodation but also ensured more hands-on experience and Peer-to-Peer (P2P) learning.  Training cum exposer visit: AEPC/SASEC/RERL organized training cum exposer visit for Mini Hydro Developers and officials of Rural Municipalities. The participants visited Salleri Chialsa Mini Hydro Project, Solukhumbu which is one of the best managed community owned projects in Nepal, and learnt about efficient management including reliable and quality electricity supply, appropriate tariff setting, timely revenue collection, maintaining inventory, prompt consumer services and regular maintenance of the plant, etc. The participants were also orientated on Mini Hydro Operation and Management Manual drafted by RERL. Altogether, 21 people including 1 woman participated.  Orientation on Special Purpose Vehicle (SPV): RERL organized an orientation on formation of SPV for development of the 422kW Shantipur Mini Hydro Project, Shantipur, Kailali. The orientation provided information on advantages and disadvantages of different institutional options such as cooperative and private company. A total of 35 Municipal officials and members of Users Committee including 2 women participated in the programme. on Cooperative & Company Acts.  Orientation on Productive Energy Uses: RERL organized orientation on Productive Energy Uses for focal person and field coordinators of Regional Technical Service Providers (RTSP) of AEPC. The main purpose of the orientation was to provide information on subsidy policy and the processes of delivery mechanism for promotion of productive energy uses. Altogether 18 men and 2 women actively participated in the training.  Monitoring Training: RERL supported Monitoring and Quality Assurance Unit of AEPC to carry out a monitoring training for engineers. The main objective of the training was imparting knowledge and skill to effectively and efficiently carry out field monitoring of the RE systems. Altogether 66 engineers participated. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **UNDP Country Office Programme Officer** | Highly Satisfactory | Satisfactory |
| Overall Assessment | The project demonstrates a very good example of what can be achieved through strong partnerships, leadership and technically sound team within a stipulated time frame.    Most of the targets of the projects have been exceeded multiple fold and this was possible by successful mobilization of the partner funds thus enabling the implementing partner - Alternative Energy Promotion Center (AEPC) in realizing its overall progress.    The project started in July 2014 and after an inception phase of 5 months, the actual implementation of the project started only in December 2014.    The goal of the project was to generate 26.8 GWh of electricity and achieve 3.5 MW of total installed renewable energy by the end of project. However, the project was successful in providing technical support to the AEPC and its partners in generating 304.58 GWh and installing 20.3 MW. Hence, the project was able to exceed its goal of electricity generation by more than 10 folds. In turn, the number of households benefited by the project was 7 times higher than planned. Another target was to reduce the greenhouse gas emissions by 35.3 tCO2e on annual basis. Considering that there are few mini hydro projects which are expected to be commissioned in the near future, the future annual avoidance of greenhouse gas will be higher. At the end of project status, the total annual greenhouse gas avoided reached 35.2 tCO2e.    The project started with a allocated budget of 5 million in 2014 but in due course of time owing to its high performance, the project was able to mobilize additional funds from the UNDP to implement the unfunded activities that were envisaged at the Inception phase. Hence, the project was able to deliver more than planned in the project document.    The inherent element of the project was to remove the barriers and demonstrate different technologies and financing options to promote RE. In this regard, the project was hugely successful in entering into the unknown territories, identifying the barriers, assessing the situation, recommending menu of options and trying out the most feasible and most appropriate option(s) – both technical and financing options. This approach helped in demonstrating what works and what does not in the RE realm. One of the biggest technological break-through the project achieved is demonstrating the grid interconnection in which micro hydro off-grid was connected to the main grid. This demonstration is landmark in several ways – a) this gives an answer to the looming dilemma regarding the relevance / redundancy of the microhydro power plants once the main grid reaches these remote areas; b) this provides additional source of income to the communities owning and operating the micro hydro power plants thus accelerating the loan payment process; and c) improving the load factor and performance of the main grid.    Another flagship achievement of the project is the commercialization of the micro-hydro power plants. This demonstration has been successful in garnering more interest and financing support from the commercial banks and financing institutions, which otherwise have aversion to financing the community owned micro hydro power plants. The commercialization of the micro hydropower plants is a package of different innovative interventions which promise to bring a face-lift to the micro hydro power plants and have potential to fuel the decentralized economic growth even for the remote local governments. The package includes the institutionalization of the micro hydro power plants, metering the households connected to the micro hydro power plants, incentivizing the saving and credit mechanisms, promoting diverse end use of the electricity thereby enhancing the demand side and inculcating the market development / market access elements in the energy management plans. The results of the pilot projects are very encouraging because the micro hydro power plants which were at the verge of closure have sprung to their fullest operational capacity and have successfully paid the loans. This kind of success stories have given confidence to the financing institutions.    The operationalization of the large micro hydro power plants of capacity bigger than 60 Kw and the mini hydro power plants marks the evolution of the RE sector and graduation into the larger scale RE technologies. Amidst the technological challenges and financial closure barriers, the project was successful in providing technical support to the design and installation of the mini hydro power plants.    In addition to providing technical assistance and unlocking private sector financing to promote RE in Nepal, RERL was able to develop a cohort of capable human resources to work in different RE technologies. For instance, a) 168 people were trained on survey and design of mini hydro, large micro hydro and large-scale solar PV systems; b) 8 local engineering firms trained for manufacture, fabrication and repair maintenance of mini-hydro, large micro-hydro and large scale solar PV system; c) 215 trained for installation of mini hydro, large micro hydro and large-scale solar PV systems; d) 563 trained for operation of mini hydro, large micro hydro and large-scale solar PV systems.  The project started with a allocated budget of 5 million in 2014 but in due course of time owing to its high performance, the project was able to mobilize additional funds from the UNDP to implement the unfunded activities that were envisaged at the Inception phase. Hence, the project was able to deliver more than planned in the project document.    Another important area of intervention is policy support to the government to help promote renewable energy. The project was able to contribute to the landmark policy documents in addition to the Local Governance Operational Act and White Paper of the Ministry of Energy, Water Resources and Irrigation. These policy instruments include a) Renewable Energy Development Board Act which would clearly outline the roles, functions, mandates and jurisdiction of AEPC in the federal context; b) standards for grid inter-connect    Some of the noteworthy achievements of the projects include, exceeding the target of post installation demonstration support of the mini hydro power plants by 18 %; exceeding the target of installed mini grid by 66 %, exceeding the target of total installed solar photo voltaic power generation capacity by 15 folds and developing and operationalising 50% more renewable energy financial instruments than envisaged. Through the creative and need based productive end use enterprises made possible by the improved access to energy and new renewable energy financing instruments, the project created more than 2500 micro enterprises, exceeding the target by 8.5 times. This achievement credited the project for creating more jobs and contributing significantly to towards economic empowerment and livelihood alternatives to the communities living in remote areas of the country.    In the process of assessing the performance of the project over its implementation period, it is very important to recognize the myriad challenges the project faced along the way. The two biggest challenges the project faced are - mega earthquake of 2015 and the federalization process in Nepal. In view of these two major challenges, the RERL project had to adopt adaptive management throughout the project implementation phase, including towards the end of the project phase and the project emerged as a successful adopter.    Design of RERL had not envisaged the federal structure and the changes in the government’s role and management approach either. Mid-way into the project implementation, the country transitioned into a decentralized federal country from a unilateral form of governance, thus challenging the existing governance system and the outreach approach of the project. Another challenge the project faced is the early closure of the framework project, “NRREP”, thus leaving the project to find an alternative course and stay relevant to the overall RE sector promotion.    Another big adjustment that the project had to face is the reallocation of the funds and reprogramming some of the segments of the project to address the rehabilitation of the microhydro power plants damaged by the mega earthquake of 2015.    The challenges and the unforeseen turn of events that faced the project offered new avenues and opportunities too. For example, the federalization of the country and the subsequent restructuring of the government allowed the project to contribute to the preparation of the White Paper of the Ministry of Energy, Water Resources and Irrigation (MoEWRI). Contribution towards drafting the White Paper in itself is not that important. What is more important through this engagement is the opportunity to integrate and mainstream RE into the mainstay energy generation and supply stream. In addition, the federalization process gave opportunity to draft sections of the Local Government Operationalization Act, as a result of which the project could suggest the decentralization approach for the RE sector to the provincial and local governments. This is important in view of the holistic promotion of the RE and helping the local governments exercise their rights in development of power plants of the capacity upto 1 MW. The project also developed the Municipal Energy Plan, a vehicle for the municipalities to assess and plan the energy plans and choose the most appropriate energy technology to meet its annual or multi-year energy projections.    Amidst all the above mentioned challenges and serving more than 350,000 households through various forms of energy services, the project was strategic to provide much needed technical advice to the AEPC and the other RE projects implemented by AEPC such as those funded by ADB, KfW, GiZ, UNESCAP among others.    One of the metrics of measuring the importance, relevance and success of the project is the approval of the successor project. UNDP was successful in getting a follow-up project to provide technical assistance to the ongoing ADB funded SASEC project. This was made possible through the highly technically attuned support to the mini hydro power plant demonstration projects funded by ADB and helping ADB and AEPC meet its mini hydro demonstration projects.    In a nutshell, RERL has consistently performed satisfactorily and was able to achieve all the targets ahead of time. RERL was also instrumental in nurturing the establishment and proper functioning of the Central Renewable Energy Fund, thereby further accelerating the process of RE promulgation. RERL was able to continue UNDP’s quarter of a century long legacy of working in the RE sector. Continuation of the RERL project with ADB funded Technical Assistance project assures the continued support to the AEPC. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **GEF Operational Focal point** | *(not set or not applicable)* | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | *(not set or not applicable)* | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Project Implementing Partner** | Satisfactory | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | RERL supported AEPC to meet the national targets and creating a favorable environment for large scale promotion of renewable energy in the country.  2018/19 has been a remarkable year for renewable energy as it has been mainstreamed in the White Paper of Ministry of Energy, Water Resources and Irrigation (MoEWRI). Moreover, as AEPC has now come under the jurisdiction of MoEWRI, it is expected that collaboration with Department of Electricity Development (DoED) and Nepal Electricity Authority (NEA), major government agencies mandated for electricity generation and distribution, all are under the same ministry. Further, the MoEWRI has taken initiative to draft AEPC’s Act that will insure AEPC’s autonomy and clarify its roles and responsibilities at federal, provincial and municipal levels. RERL helped AEPC to draft its Transition Paper reflecting the new context and provided inputs on Draft AEPC Bill to be submitted to Government of Nepal  As mandated by the Local Government Operation Act 2017, several municipalities approach AEPC to help prepare their municipal energy plans (MEP). Based on the methodology for preparing MEPs developed by RERL, 21 municipalities were supported to prepare their MEPs by RERL and RERA/GIZ. Altogether AEPC has supported 23 municipalities to prepare their MEPs so far. The municipal energy plans focus on domestic uses such as clean cooking, lighting and operating household appliances, community systems for street lighting, community centers, schools and health centers and productive uses. Support of the federal government to municipalities on RE will be based on MEPs in future.  In 2019, the Ministry of Energy, Water Resources and Irrigation approved the “Guidelines for Development of Utility Scale Solar PV Projects” prepared by AEPC/RERL. Earlier, the document was finalized by a task force with representation from MoEWRI, DoED, Nepal Electricity Authority (NEA) and AEPC. The guidelines cover aspects from project conception, survey, design, financing and applicable rules and regulations. It is expected that the guidelines will help both developers and regulators to align their expectations and come to common understanding on forms, formats, legal requirements, etc. for development of utility scale solar PV systems.  RERL is providing technical assistance to develop 4.3MW of mini hydro and 500kWp of solar mini grid projects under AEPC/SASEC with ADB funding. As of June 2019, 165kWp solar mini grid projects have been completed and 310kWp are under construction.  RERL is providing support for survey, design, procurement, construction supervision to institution formation and strengthening, business opportunity assessment, financial closure and business plan preparation.  After the successful interconnection of 23kW Syaurebhumi MHP, Nuwakot, with the national grid, AEPC supported grid interconnection of 3 more MHPs. Though there are still several issues related to interconnection of micro hydro with the grid that need to be settled, GoN has given priority to continue support such interconnection wherever feasible.  Under its support for the private sector, RERL provided financial and technical assistance to Hydro Energy Concern (HEC) Pvt. Ltd, the contractor of the 200kW Simrutu Khola MHP, the 200kW Giri Khola MHP and the 500kW Phawa Khola MHP. The Hydro Energy Concern has been involved in micro hydropower projects for over a decade but had limited experience in mini hydro. RERL is supporting HEC through CREF to remove cash flow constraint and help build up its management capacity.  RERL supported AEPC to formulate its productive energy use promotion modality, which helped women and marginalized communities to benefit from access to electricity by establishing enterprises and income generating activities with provision of additional financial assistance. Until now, about 1500 productive use enterprises have been established with financial assistance of AEPC; of which female entrepreneur operate 70 enterprises.  To continue the remarkable complementarity between 2 AEPC projects, SASEC funded by ADB and RERL funded by GEF UNDP, ADB has agreed to provide fund for continuation of RERL upon the request of AEPC and GoN. All RERL targets agreed with GEF will be achieved through SASEC/RERL. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Other Partners** | *(not set or not applicable)* | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | *(not set or not applicable)* | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **UNDP-GEF Technical Adviser** | Highly Satisfactory | Satisfactory |
| Overall Assessment | The project's primary objective is to remove barriers to increased utilization of renewable energy resources in rural Nepal in order to support economic, environmental, and social development of people in the rural areas and to reduce GHG emissions. The project has ended and is the final PIR reporting of the project.    The project is justified for Highly Satisfactory (DO) and Satisfactory (IP) ratings as explained below:    Overall, it has successfully completed the planned activities and achieved more than its project objectives and EOP level targets. The project has achieved 47 percent more GHG emission reduction relative to the original target set. The project has specially exceeded its EOP targets against all four indicators: (1) Total installed capacity of RE – 15.70 MW (vs EOP target of 12.5 MW; (2) Total Cumulative Electricity generated annually for livelihood and quality of life improvement - 304.70GWh (vs 26.795 GWh); (3) Annual GHG emission avoided - Total Cumulative – 51,990.39 tCO2 (vs 35,375 tCO2); (4) Total beneficiary households– 357,993 HHs (vs 50,000 HH EoP target).    For Component 1, on strengthening legal, institutional and policy environment to support RE and other low-carbon technology development and utilization, all the EOP targets for the indicators’ were achieved. Most noteworthy was the support provided to AEPC to draft its Transition Paper detailing roles and responsibilities in the changed federal Government regime. The project helped in detailing the roles and responsibilities of municipalities in promotion of renewable energy and hydro power up to 1000 kW, which is now a part of the Local Government Operation Act 2017. RERL also helped AEPC to prepare its support package for Local and Provincial Government for promotion of RE in Nepal and organize orientations to officials of provincial governments and municipalities in 5 out of 7 Provinces (namely, 1, 2, 4, 6 and 7). The methodology used by the project for the preparation of the Municipal electric Plans for 11 municipalities for Provinces 2, 3 and 4 has been adopted by the GIZ supported Renewable Energy for Rural Area (RERA) project to prepare MEP of 14 municipalities of Provinces 1 and 7. The project has also developed standards for grid interconnection of both mini/micro hydropower projects and larger solar PV systems and guidelines for development of Utility Scale Solar PV Projects.    For component 2, focusing on increased investments in RE, all the EOP targets for the various indicators was achieved with about 23 banks providing loans for feasible RE-based energy projects, more than 60 RE projects proposed for financing from local financial institutions, installation of 16.4 MW large RE-based power generation capacity funded by local financial institutions and 15.7 MW installed capacity of renewable energy-based power generation projects achieving financial closure by end-of-project.    For component 3, focusing on improved availability of financial investment to support rural RE and other low-carbon technology applications, all EOP targets for the indicators have been met. This component focusing on addressing the financial barriers, successfully facilitated the implementation of renewable energy projects in rural Nepal. Several de-risking measures undertaken by the project in cooperation with CREF (Central Renewable Energy Fund) including design and establishment of financial instruments like credit guarantee, soft credit, vendor financing, vendor challenge fund, project insurance, local financial institution and micro finance institution lending. While the Vendor Financing and Vendor Challenge Fund have been utilized to promote small scale systems like solar pumping and solar home systems, the partial credit guarantee mechanism in particular has been crucial to achieve financial closure of mini hydropower projects.    For Component 4, focusing on improving design and packaging of investment support mechanisms for rural RE and other low-carbon technology applications, all EOP targets for the indicators have been met except for the total load factor of the RE projects but this can be attributed to the lower load factors of the RE project (mini/ micro hydro). The project has thus adapted to the new models of on grid systems to ensure viability through improved load factors.    Component 5 focuses on enhancing capacities and skills of various stakeholders in the RE sector and all EoP targets have been met for this outcome. Partnerships remained a key for successful implementation of this project. Collaborative efforts adopted also facilitates scale up and post project sustainability. As far as the critical risks reported, the project has shown good adaptive management in the changed political situation and has been successful in achieving all its targets. The financial risk is also mitigated to a larger extent with Government of Nepal’s decision to establish at least one commercial bank in all 746 municipalities has helped Banks and Financial Institutions to look for investment opportunities in rural areas.    The project has been able to meet its targets successfully. The cumulative delivery rate is 98.53% against the total approved budget as per ProDoc. The project has demonstrated innovative partnership approaches that can be showcased as best practices. It has integrated gender aspects as well as environment and social safeguards issues during the course of project implementation and contributed significantly to create conducive framework for promoting investments in renewable energy by linking to institutional and regulatory reforms and financial sector. Given that there are still considerable risks in the sector as noted above, while the DO rating is given as HS due to exceptionally achieving higher targets and IP rating is considered satisfactory. | |

# Gender

**Progress in Advancing Gender Equality and Women's Empowerment**

This information is used in the UNDP-GEF Annual Performance Report, UNDP-GEF Annual Gender Report, reporting to the UNDP Gender Steering and Implementation Committee and for other internal and external communications and learning.  The Project Manager and/or Project Gender Officer should complete this section with support from the UNDP Country Office.

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| **Gender Analysis and Action Plan:** *not available* |
| **Please review the project's Gender Analysis and Action Plan. If the document is not attached or an updated Gender Analysis and/or Gender Action Plan is available please upload the document below or send to the Regional Programme Associate to upload in PIMS+. Please note that all projects approved since 1 July 2014 are required to carry out a gender analysis and all projects approved since 1 July 2018 are required to have a gender analysis and action plan.** |
| *(not set or not applicable)* |

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| **Please indicate in which results areas the project is contributing to gender equality (you may select more than one results area, or select not applicable):** |
| Contributing to closing gender gaps in access to and control over resources: Yes |
| Improving the participation and decision-making of women in natural resource governance: Yes |
| Targeting socio-economic benefits and services for women: Yes |
| Not applicable: No |

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| **Atlas Gender Marker Rating** |
| **GEN1:** some contribution to gender equality |

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| **Please describe any experiences or linkages (direct or indirect) between project activities and gender-based violence (GBV). This information is for UNDP use only and will not be shared with GEF Secretariat.** |
| NA |

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| **Please specify results achieved this reporting period that focus on increasing gender equality and the empowerment of women.**    **Please explain how the results reported addressed the different needs of men or women, changed norms, values, and power structures, and/or contributed to transforming or challenging gender inequalities and discrimination.** |
| To ensure that women maximize benefit from access to electricity, Renewable Energy Subsidy Policy of Government of Nepal has provision of additional financial support to women headed households. As a result, 70 women have established electricity powered enterprises. In rural Nepal, women owned enterprises are rare even though they spend a lot of time working for their businesses usually owned by their husbands. |

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| **Please describe how work to advance gender equality and women's empowerment enhanced the project's environmental and/or resilience outcomes.** |
| Gender equality and women's empowerment is sought after by the project at every step of the value chain by awareness creation, capacity development, business establishment and operation, and marketing.    One of the successful examples of project's women empowerment quest is 200kW Simrutu Khola Mini Hydro Project is mostly owned by women as they are the overwhelming shareholders of the cooperative. This ensures women’s access to and control over resources.    In addition, the project identifies potential enterprises that can engage women in the communities where micro / mini hydro power plants are operational. These women then receive targeted training on enterprise development, organization management, accounting and book keeping which has resulted in over 1000 women engaged in saving and credit schemes in different RE projects enhanced to manage cooperatives. |

# Social and Environmental Standards

**Social and Environmental Standards (Safeguards)**

The Project Manager and/or the project’s Safeguards Officer should complete this section of the PIR with support from the UNDP Country Office. The UNDP-GEF RTA should review to ensure it is complete and accurate.

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| **1) Have any new social and/or environmental risks been identified during project implementation?** |
| No |

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| **If any new social and/or environmental risks have been identified during project implementation please describe the new risk(s) and the response to it.** |
| *(not set or not applicable)* |

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| **2) Have any existing social and/or environmental risks been escalated during the reporting period? For example, when a low risk increased to moderate, or a moderate risk increased to high.** |
| No |

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| **If any existing social and/or environmental risks have been escalated during implementation please describe the change(s) and the response to it.** |
| *(not set or not applicable)* |

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| **SESP:** [PIMS 4522 ESSP.pdf](https://undpgefpims.org/attachments/4522/213353/1662682/1662963/PIMS%204522%20ESSP.pdf)  **Environmental and Social Management Plan/Framework:** *not available* |
| **For reference, please find below the project's safeguards screening (Social and Environmental Screening Procedure (SESP) or the old ESSP tool); management plans (if any); and its SESP categorization above. Please note that the SESP categorization might have been corrected during a centralized review.** |
| [Progress Report\_Rukum Rolpa\_Oct\_2018.docx](https://undpgefpims.org/attachments/4522/213353/1729071/1744048/Progress%20Report_Rukum%20Rolpa_Oct_2018.docx)  [Resettlement Framework.pdf](https://undpgefpims.org/attachments/4522/213353/1729071/1744048/Resettlement%20Framework.pdf)  [SASEC\_ECMR\_Jan-June2019.docx](https://undpgefpims.org/attachments/4522/213353/1729071/1744048/SASEC_ECMR_Jan-June2019.docx) |

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| **3) Have any required social and environmental assessments and/or management plans been prepared in the reporting period? For example, an updated Stakeholder Engagement Plan, Environmental and Social Impact Assessment (ESIA) or Indigenous Peoples Plan.** |
| Yes |

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| **If yes, please upload the document(s) above. If no, please explain when the required documents will be prepared.** |
| Environment and Social Safeguard (ESS) Assessment of the following mini hydro and solar mini grid projects have been carried out;  1. Mini Hydro  i) Simrutu Khola MHP, Rukum  ii) Giri Khola MHP, Jumla  iii) Phawa Khola MHP, Taplejung  iv) Lower Bom Khola MHP, Solukhumbu  v) Patrasi Chukeni Khola MHP, Jumla  vi) Khatyad Khola MHP, Mugu    2. Solar Mini Grid  i) Ramite SMG, Morang  ii) Harkapur Chisapani SMG, Sindhuli  iii) Gutu SMG, Surkhet  iv) Sugarkhal SMG, Kailali  v) Malladehi Dandapur SMG, Baitadi  vi)Saptame SMG, Panchthar  vii)Olane SMG, Panchthar |

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| **4) Has the project received complaints related to social and/or environmental impacts (actual or potential )?** |
| No |

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| **If yes, please describe the complaint(s) or grievance(s) in detail including the status, significance, who was involved and what action was taken.** |
| *(not set or not applicable)* |

# Communicating Impact

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| **Tell us the story of the project focusing on how the project has helped to improve people’s lives.**  **(This text will be used for UNDP corporate communications, the UNDP-GEF website, and/or other internal and external knowledge and learning efforts.)** |
| Countless Lives Saved through Solar PV Back up System in Health Center    Dr. Sandip Mahat expressed his happiness that with solar PV back up system, they could now easily operate all the equipment and safely store anti-venom vaccines. Dr. Mahat is the Head of Salkot Primary Health Centre, Surkhet, one of the beneficiaries of UNDP funded solar PV back up systems installed by RERL in 2018. He further added that 3 snake bite victims died the previous year as the Centre was not able to treat them with properly stored vaccines as the power from the local micro hydro was not sufficient to operate all the medical equipment in the Centre. In 2018, UNDP provided additional financial assistance to support install solar PV back up systems in 6 snake bite treatment centers.    According to Prof. Shyam P. Lohani of Nobel College, Pokhara University, 4823 suspected snake bite cases were reported in a one-year period between July 2008 and June 2009. However, there are limited numbers of snakebite treatment centers in the country, which face additional challenge in properly storing anti-venoms and operating suction machines due to poor and unreliable electricity supply. To ensure safe and reliable anti-venoms storage, UNDP partnered with Government of Nepal in 2016 to pilot solar PV back up systems in 3 snakebite treatment centers operated by the Nepal Army in Morang, Sunsari and Jhapa districts, where the incidences of snakebite are amongst the highest in Nepal. Each of the 1.5kWp Solar PV back up system provides electricity for storing anti-venoms safely, operating suction pumps for cleaning the infections and nebulizer. This initiative continues saving countless lives by making these centers to be energy independent. |

**Knowledge Management, Project Links and Social Media**

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| **Please describe knowledge activities / products as outlined in knowledge management approved at CEO Endorsement /Approval.**    **Please also include: project's website, project page on the UNDP website, blogs, photos stories (e.g. Exposure), Facebook, Twitter, Flickr, YouTube, as well as hyperlinks to any media coverage of the project, for example, stories written by an outside source. Please upload any supporting files, including photos, videos, stories, and other documents using the 'file lirbary' button in the top right of the PIR.** |
| RERL was designed to support AEPC to remove barriers for wide scale dissemination of less popular technologies such as mini hydro and large solar PV systems as Nepal at that time was focused on micro hydro and solar home systems. As discussed above, RERL worked in the following areas and was able to generate different documents benefiting from end users up to policy makers.  • Utility Scale Solar PV Guidelines  • Mini hydro Operation Guidelines  • Commercial Operation of Micro Hydro Guidelines  • Municipal Energy Plan (MEP)  • Documentary on Commercial Operation of Micro Hydro  • Documentary on Energy for Education  • Documentary on Telkuwa Irrigation  • Documentary on Dhading Solar  • Infographics (SDGs)  • Local Government Operations Act 2017  • Methodology for Municipal Energy Plan  • Renewable Energy Survey Tool (REST)  • Documentary on Snake Bite Treatment Center  • Documentary on RE technology  • Documentary on Dhading Solar Project    www.aepc.gov.np  www.rerl.gov.np  https://twitter.com/RERLUNDP  http://kathmandupost.ekantipur.com/news/2018-03-11/diversity-in-power.html  https://www.linkedin.com/pulse/frequently-asked-questions-grid-interconnection-micro-mallik/  https://www.linkedin.com/pulse/deployment-grid-connected-solar-photovoltaics-nepal-mallik/  https://www.linkedin.com/pulse/development-grid-connection-policy-micromini-hydro-plants-mallik/  https://www.linkedin.com/pulse/opportunity-challenges-solar-minimicro-grid-nepal-jiwan-kumar-mallik/ |

# Partnerships

**Partnerships & Stakeholder Engagment**

Please select yes or no whether the project is working with any of the following partners. Please also provide an update on stakeholder engagement. This information is used by the GEF and UNDP for reporting and is therefore very important!  All sections must be completed by the Project Manager and reviewed by the CO and RTA.

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| **Does the project work with any Civil Society Organisations and/or NGOs?** |
| Yes |

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| **Does the project work with any Indigenous Peoples?** |
| Yes |

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| **Does the project work with the Private Sector?** |
| Yes |

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| **Does the project work with the GEF Small Grants Programme?** |
| No |

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| **Does the project work with UN Volunteers?** |
| No |

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| **Did the project support South-South Cooperation and/or Triangular Cooperation efforts in the reporting year?** |
| Yes |

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| **CEO Endorsement Request:** [PIMS 4522 NEP RERL CEO Endorsement Request 130214.docx](https://undpgefpims.org/attachments/4522/213353/1662690/1662971/PIMS%204522%20NEP%20RERL%20CEO%20Endorsement%20Request%20130214.docx) |
| **Provide an update on progress, challenges and outcomes related to stakeholder engagement based on the description of the Stakeholder Engagement Plan as documented at CEO endorsement/approval (see document below). If any surveys have been conducted please upload all survey documents to the PIR file library.** |
| Does the project work with any Civil Society Organisations and/or NGOs?  At the field level, RERL has directly been working with beneficiaries following the much-acclaimed REDP’s community empowerment model - where the community is provided close and consistent support to build their capacity and to engage in all aspects of service delivery ranging from project identification, planning, implementation, management, operation and monitoring.  RERL has been supporting municipalities to prepare municipal energy plans in participatory approach, engaging individuals, elected officials, civil society, private sectors, governmental line agencies and donors. So far, RERL has supported to prepare 2 Municipal Energy Plan (MEP) for Palungtar, Municipality in Gorkha and Mahankal Rural Municipality in Lalitpur.  In the new federal context, the responsibility for renewable energy promotion has been given to the local governments. RERL organized 3 orientation programmes in the mid and far western regions for local elected officials on their roles and responsibilities in promotion of RE and hydropower projects up to 1MW.    Does the project work with any Indigenous Peoples?  Yes. Most of the beneficiaries of mini hydro and solar PV projects are indigenous or marginalized people    Does the project work with the Private Sector?  Yes. RERL provided support to Hydro Energy Concern to help strengthen its management. Hydro Energy Concern is supplying and installing electro mechanical equipment of 3 mini hydro projects funded by SASEC. Another significant RERL support for the private sector capacity development includes Preesu Electronics Pvt. Ltd and Techno Village Pvt. Ltd in both grid connections of MHP and MHP to MHP interconnection. RERL provided extensive technical support to both companies to successfully complete grid connection of 4 MHPs and establishment of Taplejung Mini Grid interconnecting 5 MHPs.    Does the project work with the GEF Small Grants Programme?  Yes. In 1 solar pumping project, the community is mobilizing GEF Small Grant fund to establish poly houses and micro irrigation systems for growing high value agricultural products.    Does the project work with UN Volunteers?  No    Did the project support South-South Cooperation and/or Triangular Cooperation efforts in the reporting year?  UNDP Country Office China coordinated with country offices in Belt and Road area to submit proposals for China South-South Cooperation Assistance Fund (SSCAF). RERL submitted a proposal for providing renewable energy solution mainly solar PV and clean biomass in 10 rural municipalities of border districts. Besides, RERL has also worked with partners in the region to both learn from their experiences and share Nepal’s experience in renewable energy development. Some of these are discussed below;  - HP Net organized a workshop on grid interconnection of micro hydro in Sri Lanka and invited 2 policy makers from Nepal. The experience of Sri Lanka was instrumental in Nepal’s decision to allow micro hydro grid interconnection.  - RERL supported Preesu Electronics to import digital load controller (DLC) from Indonesia which has been used in both MHP to MHP and MHP to grid interconnections. Further, with RERL facilitation Preesu Electronics has exported more than 200 electronic load controllers to Aga Khan Rural Support Programme (AKRSP), Pakistan.  - RERL shared Nepal’s experience in micro hydro development with Meghalaya Government, India to prepare their own plan.    CEO Endorsement Request: PIMS 4522 NEP RERL CEO Endorsement Request 130214.docx  Provide an update on progress, challenges and outcomes related to stakeholder engagement based on the description of the Stakeholder Engagement Plan as documented at CEO endorsement/approval (see document below). If any surveys have been conducted please upload all survey documents to the PIR file library.    RERL was designed as a project under the single modality framework of National Rural Renewable Energy Programme (NRREP) to support it for promotion of mini hydro and large scale solar PV systems. It was envisaged that RERL provide technical assistance to projects funded by NRREP. However, NRREP was focused on micro hydro and solar home systems and its fund could be leveraged only for large micro hydro (60+kW) projects and institutional solar PV systems. RERL had to partner with other programmes/projects/activities within AEPC and outside to leverage funds to meet its demonstration and post demonstration targets. Fortunately, before the closure of NRREP in July 2017, AEPC & ADB initiated South Asia Sub-regional Economic Cooperation (SASEC) project to develop Mini Hydro (4.3MW) & Solar Mini Grid (500kW) projects in 2016 and RERL has been working closely with SASEC to achieve its targets. RERL was able to mobilized USD 35.31M from GoN/AEPC and its programme/projects mainly as grant/subsidy for mini hydro, micro hydro interconnected mini grid, grid connection of micro hydro, large micro hydro, rehabilitation of micro hydro, large solar PV systems (institutional solar, solar pumping and solar mini grids) and productive energy uses. Besides regular GoN/AEPC subsidy, RERL provided technical assistance to donor funded projects through AEPC such as installation of 50 KfW funded solar PV pumping systems, the World Bank and GoN funded Taplejung Mini Grid and GoN funded grid interconnection of MHP. RERL also collaborated with Nepal Army and District Health Offices to provide solar back up systems with UNDP fund to snake bite treatment centers and birthing and health centers.  Similarly, the local governments, beneficiary communities and private companies provided USD 20.49M mainly for project development.  Beside governmental agencies like Ministry of Energy, Water Resources and Irrigation, Department of Electricity Development, Nepal Electricity Authority, Ministry of Federal Affairs and General Administration, Provincial Governments and Municipalities, RERL worked with development partners and INGOs, NGOs, academic institutions, private sector and UN agencies to mobilize resources, avoid duplication, work together and synergize activities.  RERL also worked with several UN agencies for promotion of renewable energy such as, i) UNCDF to support Central Renewable Energy Fund (CREF) to prepare its business plan and Vendor Challenge Fund Manual and establish and operationalize Vendor Challenge Fund, ii) UNESCAP to develop Dubung Solar Mini Grid and Raksirang Solar Irrigation Project under Pro Poor Public Private Partnership (5P), iii) Gyeonsangbuk-do, South Korea: UNDP Policy Center Seoul, South Korea and Country Office Nepal mobilized USD 100,000 from Gyeonsangbuk-do Provincial Government of South Korea for Dhading Solar Project to provide solar solutions for lighting, water supply, irrigation and grinding grains for extremely marginalized Chepang community of central Nepal and iv) RERL mobilized USD 100,000 from Belhi Group Nepal (BGN), a Danish NGO to install the solar systems and civil works and about USD 32,000 from GEF Small Grant Programme to support the rural community in southern Nepal to support micro irrigation and poly ouses for high value crop production.    Besides the partnerships discussed above, RERL also worked with other partners which is listed below;    Development Partners and I/NGOs  - The World Bank: USD 500,000 for Taplejung Mini Grid which connects 5 MHPs and 1 mini hydro with the total capacity of 826kW and provide electricity to the district headquarters. The GoN provided USD 300,000 for completion of the project. RERL also worked with the World Bank and National Academy of Science and Technology (NAST) to prepare Capacity Need Assessment of the renewable energy sector. Further, RERL provided extensive inputs for designing the World Bank funded Nepal Mini Grid Project for AEPC.  - GiZ/RERA: RERL and Renewable Energy for Rural Areas (RERA) programme of GIZ have been working very closely for finalizing methodology for Municipal Energy Plans (MEP) and preparing MEPs, commercializing operation of solar mini grid and MHP in RERA programme area.  - Practical Action: RERL provided financial support to the communities to install 2 solar irrigation projects in Dhading and Makawanpur districts and extension of 11kV line for power export from an MHP in Achham. In both these activities Practical Action mobilized financial assistance from WISION, Germany.  - Winrock: RERL and Winrock Nepal have been working very closely to promote small scale solar irrigation systems under Pay-as-You-Go model of solar pumping through BFIs and support for Commercial Operation of MHPs with Euro 50,000 from WISION, Germany.  - Coca Cola Foundation: USD 50,000 was mobilized from the Coca Cola Foundation to install 5 micro hydro operated lift irrigation (MHOLI) projects in Dhading. After easy availability of water, the community members living on the mountain sides without water supply have been engaged in vegetable farming quadrupling their annual incomes.  - Royal Norwegian Embassy, Kathmandu: UNDP mobilized USD138,685 to support the National Planning Commission to prepare Rapid Assessment and Gap Analysis (RAGA) report for SEforAll which was the basis for preparation of SDG 7 road map of Nepal  - FINIDA/RVWRMP: RERL worked with the Finnish project on multiple use of water including installation and sustainable operation of micro hydropower plants in far- western, Nepal. Two RERL supported MHPs received financial assistance from FINIDA/RVWRMP both for financial closure and integrated water uses  - People Environment Energy Development Association (PEEDA): PEEDA mobilized resources from Bristol University for testing technical viability of electric cooking in a RERL supported micro hydropower plant in Rukum district. Ten households were provided induction heaters for cooking and found them to be much handier, faster and cleaner than traditional biomass cooking stoves. The test also included effects on MHP and found that the generator and the control system could easily handle the additional inductive load.  - Small Farmer Cooperatives Association (SFCA): RERL and Winrock partnered with SFCA for promotion of small scale solar irrigation projects through access to finance to its members particularly in Chitwan and Nawalparsi districts. SFCA provided credit to 36 members to install household size solar pumps.  - Academic Institutions: RERL has also been collaborating with academic institutions from Nepal and abroad on viability of commercial operation of MHP (Duke University, USA), design, fabrication and testing of digital load controller for parallel operation of MHPs (Institute of Engineering and Kathmandu Engineering College, Tribhuvan University and University of Prince Edward Island (UPEI) Canada and local fabrication and testing of productive end use equipment (Pokhara University and Handung University, South Korea). |

# Annex - Ratings Definitions

**Development Objective Progress Ratings Definitions**

(HS) Highly Satisfactory: Project is on track to exceed its end-of-project targets, and is likely to achieve transformational change by project closure. The project can be presented as 'outstanding practice'.

(S) Satisfactory: Project is on track to fully achieve its end-of-project targets by project closure. The project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Project is on track to achieve its end-of-project targets by project closure with minor shortcomings only.

(MU) Moderately Unsatisfactory: Project is off track and is expected to partially achieve its end-of-project targets by project closure with significant shortcomings. Project results might be fully achieved by project closure if adaptive management is undertaken immediately.

(U) Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets by project closure. Project results might be partially achieved by project closure if major adaptive management is undertaken immediately.

(HU) Highly Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets without major restructuring.

**Implementation Progress Ratings Definitions**

(HS) Highly Satisfactory: Implementation is exceeding expectations. Cumulative financial delivery, timing of key implementation milestones, and risk management are fully on track. The project is managed extremely efficiently and effectively. The implementation of the project can be presented as 'outstanding practice'.

(S) Satisfactory: Implementation is proceeding as planned. Cumulative financial delivery, timing of key implementation milestones, and risk management are on track. The project is managed efficiently and effectively. The implementation of the project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Implementation is proceeding as planned with minor deviations. Cumulative financial delivery and management of risks are mostly on track, with minor delays. The project is managed well.

(MU) Moderately Unsatisfactory: Implementation is not proceeding as planned and faces significant implementation issues. Implementation progress could be improved if adaptive management is undertaken immediately. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are significantly off track. The project is not fully or well supported.

(U) Unsatisfactory: Implementation is not proceeding as planned and faces major implementation issues and restructuring may be necessary. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are off track with major issues and/or concerns. The project is not fully or well supported.

(HU) Highly Unsatisfactory: Implementation is seriously under performing and major restructuring is required. Cumulative financial delivery, timing of key implementation milestones (e.g. start of activities), and management of critical risks are severely off track with severe issues and/or concerns. The project is not effectively or efficiently supported.