



TERMS OF REFERENCE

Scaling-up Renewable Energy Program (SREP)

SREP IP Revision Joint Mission

13 – 16 January 2015

Kathmandu, Nepal



Asian Development Bank



1. INTRODUCTION

1.1 The Government of Nepal (GoN) has informed the Asian Development Bank (ADB), the International Finance Corporation (IFC), and the International Bank for Reconstruction and Development (IBRD) of their interest to revise the Scaling Up Renewable Energy Programme for low-income countries (SREP) Investment Plan (IP). The SREP Sub-Committee has endorsed the Nepal SREP IP in November 2011 and confirmed its endorsement together with the Note on Proposed Revision to the Investment Plan for Nepal in March 2012.

1.2 The rationale for the proposed changes to the IP is discussed briefly below. The GoN has agreed to host the SREP IP Revision Joint Mission with ADB as the lead Multilateral Development Bank (MDB) from 13 to 16 January 2015 with the intent to review the progress and submit the revised IP for endorsement by March 2015.

2. COUNTRY CONTEXT

2.1 Nepal is one of the poorest countries in the world and increasing access to energy is among its development challenges. The country's energy crisis has affected its overall economic and social development, including health and environmental impacts. In 2011, only 69% of the household population has access to electricity; 94% has access in urban areas and 60% in rural areas. The energy consumption per capita is one of the lowest in the region about 380 kilogram of oil equivalent. The per capita electricity consumption is only 102 kilowatt hours (kWh) per year. Almost 80% of the country's energy consumption is from traditional sources, 17% from commercial sources, and 3% from renewable sources. The use of commercial petroleum, although constitutes a small fraction of the total consumption, is considered unsustainable since its import costs account for almost 25% of the country's budget.

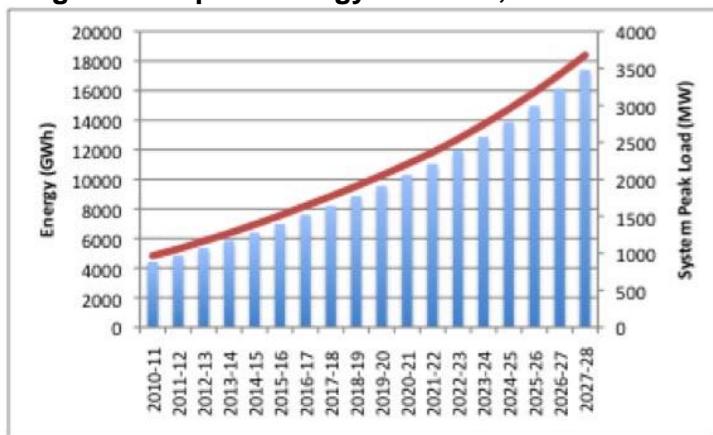
2.2 Nepal's power generation capacity of 782.5 MW, which is predominantly hydropower (729 MW), is insufficient to meet the growing demand. In 2013, peak power demand in Nepal reached 1201 MW, and is projected to continue increasing by around 7.5 percent annually until 2020. Due to the shortfall in power delivery capacity, regular load shedding has been inevitable, with attendant economic consequences.

Table 1: Electricity Gap, 2013

| | |
|--|------------------|
| Annual Peak Demand | 1201 MW |
| Dry Season Generation | 675 MW |
| Deficit (Gap) | 526 MW |
| | |
| Annual Total Energy Demand | 5,909 GWh |
| Generated Energy from Available Source | 3,559 GWh |
| Annual Energy Gap | 2,350 GWh |

2.3 Electricity demand is forecast to reach about 3,866 MW in year 2027-28 (medium growth scenario) which is an increase of some 2,665 MW from the present peak demand. The energy forecast indicates an energy output of 18,086 GWh by 2027-28. This implies that national electricity shortage will only become more severe in the future if energy demands will not be addressed in a timely and effective manner.

Figure 1: Nepal's Energy Forecast, 2011-2028



2.4 Nepal has abundant hydropower potential. The theoretical hydropower potential is about 83,000 MW, of which 43,000 MW is considered to be technically and economically viable. However, to date Nepal has harnessed less than 1000 MW of this potential. Therefore, despite the country's vast hydroelectric potential and the large share of electricity met by hydropower, hydropower represents a negligible portion of the overall energy profile of Nepal.

2.5 In meeting the country's energy demand, Nepal is confronted with various institutional, technical and financial challenges: insufficient investment in generation, transmission and distribution, lack of institutional arrangements to mobilize the private sector; reluctant private investors and development partners due to weak governance and institutional structures; limited availability of domestic funds; relatively low consumer tariffs; technical and commercial losses; a financially stressed public sector utility; and inadequate human resource capacity.

3. GoN POLICIES AND MEASURES

3.1 Renewable energy (RE) development remains a priority program of the GoN. The low coverage of the national grid, increasing demand for rural electrification, appropriateness of decentralized energy systems in sparsely populated rural areas, availability of alternative energy resources, and the need to respond to climate change are some of the key drivers for increasing investment in the RE sector.

3.2 GoN's goal for the next 20 years is to increase the share of RE from less than 3% to 10% of the total energy supply, and to increase the access to electricity from alternative energy sources from 10% to 30%.

3.3 The policy and sector frameworks that supports RE development as discussed in the original IP remain in effect. Policy framework and cross-sectoral measures include the following key documents:

- RE Plans as Part of National Plans since 1985
- Rural Energy Policy 2006
- Subsidy Policy for Renewable (Rural) Energy 2013
- Subsidy Delivery Mechanism 2013
- Hydro-Power Development Policy 2001
- Electricity Act 1992 of Nepal

- Other relevant energy sector policies: Water Resources Strategy 2002 and National Water Plan 2005; National Electricity Crisis Resolution Action Plan 2008; Reports of the Task Force for Generating 10,000 MW Hydropower in 10 Years (2011-2020) and 25,000 MW Hydropower in 20 Years (2011-2030); and National Energy Strategy 2009 (*draft*)

3.4 GoN is implementing the National Rural and Renewable Energy Programme (NRREP) which is a single program modality wherein government commits to reform the subsidy system and finance a higher portion of the subsidies for RETs. The NRREP includes all existing and future programs and projects where AEPC is the executing partner. In 2013, the Central Renewable Energy Fund (CREF) was established as NRREP's financial intermediation mechanism. The CREF is responsible for the effective delivery of subsidies and credit support to the RE sector.

4. RATIONALE FOR SREP IP REVISION

4.1 As shown in the indicative financing plan from the original endorsed IP and the Note on the Proposed Revision to the Investment Plan for Nepal, the \$40 million SREP funds were directed to two broad categories of investments: (i) small hydropower development; and (ii) mini and micro energy initiatives.

Table 2: Nepal SREP Fund Allocation

| | Program | SREP Financing | Lead MDB |
|---|------------------|-----------------------|--------------------------|
| Component I: Small hydropower Development | SHP | \$10m | IFC |
| | SHP | \$10m | ADB (private sector arm) |
| Component II: Mini and Micro Initiatives: Off grid Electricity | Solar PV | \$5m | ADB |
| | Mini/micro hydro | \$7m | ADB |
| Component III: Mini and Micro Initiatives: Biogas | Biogas | \$8m | WB |

4.2 As of October 2014, the Subcommittee has approved \$39.94 million¹ of the total allocated SREP funds. As shown in Table 3, two public sector projects are already board approved – the ADB Rural Electrification through Renewable Energy Project (\$11.2 million) and the IBRD Extended Biogas Program (\$7.9 million). The ADB Private Sector Operations Department (ADB-PSOD) and IFC private sector small hydropower (SHP) component, has been approved by the SREP subcommittee but has not progressed to project development and appraisal stage, and this component is not expected to move forward. Therefore, GoN and the MDBs have discussed the possibility of shifting resources from the small hydropower component into new investment modalities as well as possible shifting of some resources from private sector to public sector, which would warrant revision of the investment plan. Moreover, the schedule of IP implementation review is deemed timely and necessary given that the original IP was first endorsed in 2011.

¹ SREP Semi-Annual Operational Report (SREP/SC.12/3 October 21, 2014); the \$39.94 million includes project preparation grant (\$0.58 million), IP preparation grant (\$0.26 million) and project approvals (\$39.1 million).

Table 3: Nepal SREP IP Projects Status (December 2014)

| Components | Projects | Sector | SREP Fund | Sub-Committee Approval | MDB Approval | MDB |
|--|--|---------|-----------|------------------------|--------------|------|
| Component 1: Small hydropower development | Small hydropower development | Private | 10.0 | Oct 2012 | -- | ADB |
| | Small hydropower development | Private | 10.0 | Oct 2012 | -- | IFC |
| Component 2: Mini and micro initiatives | Off grid electricity (Rural Electrification Through Renewable Energy) ² | Public | 11.2 | May 2014 | Jul 2014 | ADB |
| | Extended Biogas Program | Public | 7.9 | Feb 2014 | Aug 2014 | IBRD |

5. MISSION OBJECTIVES AND OUTPUTS

5.1 The overall objective of this joint mission is to support the GoN in the revision of its SREP IP. The specific objectives are:

- (i) Review implementation status of the original IP, including readiness of all existing components, and to further assess circumstances and rationale for revising the IP;
- (ii) Agree on possible reallocation of SREP funds within the existing priority sectors and, if necessary, transfer from private sector to public sector;
- (iii) Consult with government and other key stakeholders to assess the impact of such changes on achieving the objectives and targets of the original IP; and
- (iv) Agree on roles, responsibilities and timeline for finalization of the revised IP

5.2 At the completion of the joint mission, the main outputs will be (i) an aide-memoire that describes key issues, agreements reached, recommendations, and next steps; and (ii) initial working draft of the Revised IP.

5.3 A follow-up mission can take place before finalizing the revised IP, if necessary.

6. MISSION DATES

6.1 The joint mission is proposed for 13 to 16 January 2015 in Kathmandu, Nepal.

7. MISSION COMPOSITION

7.1 The joint mission will be coordinated by the GoN through the Ministry of Finance (MOF) and Ministry of Science, Technology and Environment (MOSTE) which are the focal points for SREP in Nepal. The MOF focal person is Mr. Bhurban Karki, Undersecretary, Ministry of Finance (bkarki@mof.gov.np); and the MOSTE focal person is Mr. Ram Prasad Lamsal, Joint Secretary, Ministry of MOSTE (rplamsal@moste.gov.np, ramplamsal@gmail.com).

² South Asia Subregional Economic Cooperation Power System Expansion Project (Rural Electrification Through Renewable Energy)

7.2 The MDBs focal points for SREP are: ADB: Jiwan Acharya (jacharya@adb.org); WB: Gevorg Sargsyan (gsargsyan@worldbank.org); IFC: Joyita M. Mukherjee (jmukherjee1@ifc.org).

7.3 The mission team will be composed of the following:

ADB:

- Priyantha Wijayatunga, Senior Energy Specialist
- Preety Bhandari, CIF Advisor
- Jiwan Acharya, Senior Climate Change Specialist (Clean Energy)

IFC:

- Joyita Mukherjee, Senior Investment Officer

7.4 Representatives from IBRD will also join the mission.

8. PRELIMINARY AGENDA

8.1 Table below presents a tentative agenda and timetable for the activities for the SREP IP Revision Joint Mission.

Table 4: Joint Mission Preliminary Agenda

| Date | Activities |
|------------------|--|
| 12 January (Mon) | Arrival of Mission Team in Katmandu, Nepal |
| 13 January (Tue) | MDB team meeting Kick-off meeting with MoF and MoSTE |
| 14 January (Wed) | Meeting with government agencies, bilateral organizations, private sector |
| 15 January (Thu) | Stakeholder Workshop |
| 16 January (Fri) | Finalization of the draft IP revision and wrap up meeting with MoF and MoSTE |
| 17 January (Sat) | Departure of Mission Team |

Annex 1: Proposed Outline of the Revised SREP Investment Plan

- I. Introduction
- II. Status of Original Investment Plan Implementation
- III. Circumstances and Rationale for Investment Plan Revision
- IV. Proposed Changes to the Investment Plan
- V. Potential Impacts of Proposed Changes on Investment Plan Objectives and Targets

Appendix 1: Summary of Stakeholder Outreach

Annex 2: Preliminary Stakeholder Consultation List (Not Exhaustive)

National Institutions:

- National Planning Commission
- Ministry of Science, Technology and Environment
- Ministry of Finance
- Ministry of Energy
- Alternative Energy Promotion Center
- Nepal Electricity Authority
- Department of Electricity Development

Private Sector Organizations:

- Confederation of Nepalese Industries
- Federation of Nepalese Chambers of Commerce and Industry
- Independent Power producers' Association Nepal
- Clean Energy development Bank
- Himalayan Bank Limited
- Kumari Bank Limited
- Nepal Investment Bank Limited
- Nepal Bangladesh Bank Limited
- NIC Bank
- Winrock International
- Rural Energy Technology Associations (mini and micro hydro, solar, biogas)

Development Partners (other than MDBs):

- United Nations Agencies
- United States Agency for International Development (USAID)
- Department of International Development, UK (DFID)
- Royal Norwegian Embassy
- Embassy of Finland
- Swiss Development Agency
- Australian embassy
- Danish embassy
- German International Cooperation Agency (GIZ)
- KfW
- Korea International Cooperation Agency (KOICA)
- SNV
- Japan International Cooperation Agency (JICA)