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August 30, 2011

Mr. Krishna Hari Baskota
Secretary
Ministry of Finance
Government of Nepal
Singha Durbar, Kathmandu

Dear Mr. Baskota,

Scaling-up of Renewable Energy Program for Low Income Countries (SREP): ADB, IFC, World Bank Joint programming Mission July 4-11, 2011

We are pleased to send you the final Aide Memoire for the above mentioned mission, which incorporates the comments provided in your communication dated August 5, 2011.

The objective of this Programming Mission was to advance the process of preparation of Investment Plan, by collaborating with the Government of Nepal in identifying the strategic role of the SREP funds, linkages with other proposed initiatives and introducing the Investment Plan consultants to relevant stakeholders. The Mission team held meetings with the Ministries of Finance, Environment and Energy, the National Planning Commission, the Alternative Energy Promotion Center, the Nepal Electricity Authority and the SREP Steering Committee. In addition, the Mission team also held consultations with the private sector, commercial banks and other developmental partners.

The mission informs us that you would like to formally submit the Investment Plan for approval at the SREP sub-committee meeting in October/November 2011. For this, the draft SREP Investment Plan would need to undergo public consultations, reviews by MDBs and by external reviewers by early-September 2011. A second (and conclusive) Joint Programming Mission would be organized in mid-September 2011 to finalize the SREP Investment Plan, ahead of submission to the Climate Investment Fund Administrative Unit (CIF-AU) by end-September 2011.

We understand that the Government of Nepal is planning to create a "*Central Renewable Energy Fund*" (CREF) to channel funds from multilateral/bilateral agencies as well as government and private sector entities – including the SREP funds for the mini-micro energy component. We are pleased to know that the proposed fund would have a separate board of directors and would be administered by an independent and professional fund management agency. We would encourage you to maintain these basic tenets when actually formulating the fund to foster good governance and accountability. It is important to note that timely and acceptable formulation of the broad fund structure, governance arrangements and operating modalities would be critical for routing SREP funds through the proposed CREF. We encourage you to devise such a formulation in time for successful implementation of the SREP. In the event that this is not achievable, we would advise you to suggest a suitable alternate mechanism for management of SREP funds for the mini-micro energy component.

The mission also informs us that Government of Nepal is examining the possibility of expanding the scope of AEPC from up to 1 MW at present to up to 5 MW and subsequently up to 10 MW. While this could enable both small hydropower and mini-micro energy components of the Nepal SREP to be managed through the CREF/AEPC, we are concerned that institutional capabilities of these institutions necessary to cater to private sector led development of Small Hydropower (SHP) projects cannot be developed within such a short time.

We are also informed that Government of Nepal is exploring SREP resources for the recently announced *"People's Hydropower Program"* under which resources from local communities, hydropower royalties and government funds shall be used to develop small to medium sized hydropower projects. The mission team has highlighted important concerns regarding bankability of projects under such a program, encompassing adequacy of ownership structures, governance mechanisms, project management capabilities, resource mobilization and operation and maintenance of assets created. Considering these issues and the timeline for SREP implementation in Nepal, we suggest that you consider using SREP funds under the small Hydropower component in conjunction with equity from private developers, and loans from commercial banks and multilateral agencies through mechanisms already being explored by the International Finance Corporation and the private sector wing of the Asian Development Bank. We feel that this may be the fastest and most effective route for demonstrating early success in the area of scaling-up SHP development.

We would again like to thank you for the hospitality extended to our Joint Programming Mission team. The next mission (Second Joint Programming Mission) is likely to be organized towards mid-September, 2011.

Sincerely,

Barry Hitchcock Country Director Asian Development Bank	Rajeev Gopal Resident Representative International Finance	Christine E. Kimes Acting Country Manager The World Bank

cc: Hon'ble Vice Chairman, Dr. Dinesh Chandra Devkota, National Planning Commission
Hon'ble Member, Mr. Ram Kumar Sharma, National Planning Commission
Mr. Krishna Gyawali, Secretary, Ministry of Environment
Mr. Balananda Paudel, Secretary, Ministry of Energy
Mr. Gopi Nath Mainali, Joint Secretary, National Planning Commission
Mr. Lal Shanker Ghimire, Joint Secretary, FACD, Ministry of Finance
Mr. Purushottam Ghimire, Joint Secretary, Ministry of Environment
Mr. Batu Krishna Uprety, Joint Secretary, Ministry of Environment
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Aide-Memoire
Scaling-up Renewable Energy Programs in Low Income Countries (SREP)
First Joint Programming Mission to Nepal
July 4-11, 2011

I. INTRODUCTION

1. A Joint World Bank, Asian Development Bank (ADB) and International Finance Corporation (IFC) mission (the Mission[1]) visited Nepal from July 4-11, 2011 to conduct the Programming Mission for the project on Scaling up Renewable Energy Programs in Low Income Countries (SREP), on the invitation of the Government of Nepal (GoN). Nepal has been selected as one of the pilot countries with up to US$40 million contributions under SREP (with potential additional funding from the US$60 million Reserve Fund), which is a targeted program of the Strategic Climate Fund (SCF), one of the two funds under the Climate Investment Funds (CIF). SREP supports developing countries in their efforts to expand energy access and stimulate economic growth through the scaled-up deployment of renewable energy solutions; and it provides a trigger for transformation of the renewable energy market in each target country through a programmatic approach that involves government support for market creation, private sector participation, capacity building of the key stakeholders and productive energy use. SREP is implemented by Multilateral Development Banks (MDBs), in close collaboration with other development partners including the UN and bilateral agencies. A Scoping Mission was conducted by the joint MDB mission from February 3-8, 2011 to identify key development partners, undertake stock taking of existing activities and documentation available on a range of analytical, strategic and programming activities related to renewable energy in Nepal.

2. Prior to this mission, an advance preparation grant request for $375,000 for SREP Phase-1 activities (Investment Plan preparation) has been processed and consultants engaged to assist Government in preparing the Investment Plan.

II. OBJECTIVES OF THE MISSION

3. The main objective of the First Joint Programming Mission was to collaborate with the Government of Nepal (GoN) in developing its SREP Investment Plan. The Mission was accompanied by the Investment Plan consultants. The mission also served the purpose of introducing the consultants to stakeholders and providing them guidance on formulation of the Investment Plan in consultation with the Government agencies.

4. During the mission, GoN and MDB priorities, links between SREP and other initiatives (including parallel/complementary investments by MDBs and other co-financiers) and the strategic role of the proposed SREP investments were identified and agreed among government and all other partners in a participatory and consultative manner with several government agencies, bilateral agencies and other development partners, NGOs and civil society organizations and private sector companies. The Mission also met with the SREP Steering Committee to discuss the priorities and activities to be supported under SREP.

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[1] The Mission comprised : **World Bank** – Rabin Shrestha (Senior Energy Specialist), Tomoyuki Yamashita (Senior Energy Specialist), Mikul Bhatia (Senior Energy Specialist and Co-mission leader), Mohua Mukharjee (Senior Energy Specialist), **Asian Development Bank** – Priyantha Wijayatunga (Senior Energy Specialist and Co-mission leader), Jiwan Acharya (Climate Change Specialist), Len George (Energy Specialist), Martin Jensen (Investment Specialist), Shahid Parwez (Programs/Projects Implementation Officer). **International Finance Corporation** – Anjali Garg (Energy Specialist),Pavol Vajda (Senior Operations Officer), Hemant Mandal (Senior Energy Specialist). Some of the meetings of the mission were also joined by Bibek Chapagain (Embassy of Norway) and Shiva Sharma Paudyal (Embassy of Denmark).

SUMMARY OF KEY FINDINGS

a) ***Timelines and Next Steps for Submission of SREP Investment Plan***: The Government has indicated its intention to formally submit its SREP Investment Plan for approval at the SREP sub-committee meeting in October/November 2011. The draft SREP Investment Plan would undergo public consultations, reviews by MDBs and by external reviewers by late-Aug 2011. A second (and conclusive) Joint Programming Mission would be organized in mid-Sept 2011 to finalize the SREP Investment Plan, ahead of submission to the SREP MDB Committee by end-Sept 2011.

b) ***Routing of Funds for Mini-micro Energy Component***: Timely and acceptable formulation of the broad fund structure, governance arrangements and operating modalities, consistent with the requirements of Single Program Modality[2] across various donors, would be critical for routing funds under the mini-micro energy component of SREP through the proposed Central Renewable Energy Fund (CREF). Such a broad formulation would need to be prepared in time if SREP funds are to be channeled through SREP..

c) ***Institutional Arrangement for SREP Investments***: the Government of Nepal needs to take initial steps for putting in place the necessary structures for coordinating the SREP effort as depicted in Annex-3 (or agreeable suitable alternate structures), including specifically: (i) Formation of the Rural/Renewable Energy Central Coordination Committee, (ii) Expansion of the SREP Steering Committee to include Nepal Electricity Authority (NEA), Independent Power Producers Association of Nepal (IPPAN), and Nepal Bankers Association (NBA), (iii) Formation of Sub-committees of the SREP Steering Committee on Mini-micro Energy and Small Hydropower respectively.

d) ***Proposed approach for implementing the Small Hydropower (SHP) component***: During the discussions with various stakeholders, different approaches for development of SHP such as private sector led development funded directly through the commercial banks or through a SHP Fund and People's Hydropower Program were highlighted. Considering the requirements to be fulfilled under SREP and its timeline for implementation the Mission has found that private sector led development funded through the commercial banks may be best option available for SREP in Nepal.

III. DETAILED MISSION FINDINGS

MEETING WITH THE MINISTRY OF ENVIRONMENT AND THE SREP STEERING COMMITTEE

5. The GoN informed the mission that it is in the process of expanding the scope of AEPC up to 10MW SHP development and establishing the Central Renewable Energy Fund (CREF) and adopting a new Renewable Energy Policy. It is also planning needed institutional restructuring of AEPC through appropriate legislation and policy reforms, including the ongoing Strategic and Organizational Development (SOD) initiatives. The new Renewable Energy Policy will integrate all existing policies in the renewable energy sector and form a basis for development of renewable energy sector in the country, including SHP projects up to a defined limit (5MW in the short term and 10MW in the longer term).

6. GoN had constituted the SREP Steering Committee in January 2011 to facilitate coordination on all aspects of SREP preparation.[3] The Mission was invited to the second meeting of the Steering Committee.

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[2] GoN is proposing the formulation of a Single Program Modality across all mini-micro energy initiatives going forward, encompassing all sources of funding – multilateral, bilateral, government and non-government donors.

[3] The Steering Committee is chaired by Secretary, Ministry of Environment. It has representation from Ministries of Finance and Energy, National Planning Commission (NPC), Alternative Energy Promotion Center (AEPC), Nepal Rastra Bank, Federation of Nepalese Chamber of Commerce and Industries (FNCCI), Nepal Micro-hydro Development Association, Solar Electrical Manufactures' Association and Nepal Biogas Promotion Association.

During the meeting, the Steering Committee confirmed to the Mission that SREP in Nepal would have two broad components – SHP and Mini-micro energy. The latter should be confined to mini/micro-hydropower, solar power and biogas. The Mission presented to the Steering Committee the evolving structure of the SREP engagement. The Committee expressed the need to leverage existing institutions, instruments and delivery-mechanisms to support the mini-micro energy component.

7. The Steering Committee indicated that the institutional mechanisms for the SHP and mini-micro energy components could be separate if necessary. It suggested that the proposed Central Renewable Energy Fund (CREF) may be the appropriate channel for the flow of funds for the mini-micro energy component of SREP. The Steering Committee suggested that SREP fund for small hydro (up to 10MW) component could also be channeled through the CREF if the GoN decides to expand the scope of AEPC through appropriate legal, policy and institutional arrangement to facilitate small hydro development mobilizing the proposed institutional arrangement of CREF. With this planned restructuring in the longer run, AEPC could serve as the central focal institution for facilitating the development of renewable energy sector programs in the country adopting program-based or sector-wide approach (SWAp).

8. The Mission expressed the need for building upon current approaches for delivery of mini-micro energy solutions, while incorporating elements which enable greater cost efficiency and facilitate faster scale-up, while further developing markets. These approaches should be consistent with the wider programs of GoN. The Steering Committee informed that in SHP component, Nepal's experience on public-private partnership and active involvement of the local governments and the private sector should be taken into consideration.

9. It was agreed that the Steering Committee should have two sub-committees – one on Mini-micro hydropower and another on Small hydropower to facilitate focused discussion on respective issues. The sub-committee on small hydropower would be led by a representative of the Ministry of Energy. The Mission reiterated its request from the scoping mission that representatives from Nepal Electricity Authority (NEA), Independent Power Producers Association of Nepal (IPPAN), Nepal Hydropower Association (NHA) and Nepal Bankers Association (NBA) should also be included in the Steering Committee. The Mission was informed that a representative from the Ministry of Local Development has also been included in the SREP Steering Committee.

EMPHASIS ON PUBLIC-PRIVATE PARTNERSHIPS

10. The Government of Nepal has introduced a *'White Paper on Public Private Partnerships (PPPs)'* and is planning to establish a PPP cell in the National Planning Commission. The Ministry of Finance (MoF) requested that the SREP Investment Plan be consistent with the PPP initiatives being planned in accordance with the *"Three Year Plan Document for Development of Alternate Energy"*. Apart from the identified areas of Small hydropower, Mini-micro hydropower, Biogas and Solar, the Mission was also requested to look into the possibility of supporting the proposed program on PPPs in Solid Waste Management (Waste-to-Energy). The need for supporting private sector led development of Small Hydropower (SHP) through soft loans and other financial assistance was also underscored. The Mission assured that the Investment Consultants would look into all these and the identified areas would be confirmed through their analysis.

STAKEHOLDER CONSULTATION WORKSHOP

11. A two-part workshop was organized to hold consultations with all stakeholders (including civil-society representatives) on SHP and Mini-micro Energy Initiatives. The stakeholder workshops generated views on structural, administrative and process issues to be addressed in designing SREP in Nepal. These included support from MDBs on carbon trading benefit, greater clarity on roles of various Ministries and Government agencies, role for organizations like Confederation of Nepalese Industries (CNI) to assist in due diligence, need for simpler process on EIA clearance and outreach process of applying for SREP funds (application process, processing fee, nodal agency) to be known much in advance to allow

developers to prepare in time. Findings from the workshop have been assimilated by the Investment Plan consultants and would be reflected in the draft Investment Plan.

SMALL HYDROPOWER DEVELOPMENT

Status of Small Hydropower Development in Nepal

12. To date about 75 private-sector owned small hydropower (SHP) projects (less than 25MW) with an aggregate capacity of 397MW have secured power purchase agreements (PPA) with the Nepal Electricity Authority, the sole purchaser of electricity from grid connected power plants. Of these 21 projects totaling 76.5MW are already in operation while another 11 projects with an aggregate capacity of 57MW are under construction. There are another 42 small projects for which PPAs have been signed and awaiting construction. Of these, 33 of the projects have installed capacities of less than 10MW and once developed, will have a total capacity of about 105MW. NEA informed that there are applications for another 3,000MW of installations in total by the private sector.

Meeting with Private Small Hydropower Developers

13. Members of the Independent Power Producers' Association of Nepal (IPPAN) informed the Mission of barriers that impede SHP development, such as (i) necessity of transmission line corridor for grid connection; (ii) complex/duplicated process for loan applications including environmental assessment and procurement guidelines (cost consuming International Competitive Bidding (ICB) is required but National Competitive Bidding (NCB) is acceptable in single Engineer Procure Construct (EPC) contract package); (iii) limited private bank channel (only one bank participating in PDF, resulting in lack of competitiveness); (iv) unattractive loan duration and interest; (v) currency exchange risks (lending in USD, but expense in local currency does not work) among others. One member expressed interest in the development of a storage type hydro power plant (with diurnal reservoir), but complained about the absence of regulations and incentives in the Power Purchase Agreement for supplying electricity during the peak hours. IPPAN also advised caution in disturbing the current market by introducing new mechanisms under SREP. The SREP Mission informed the developers that their concerns would be reflected in the program design proposed by the Investment Plan consultants.

Meeting with Nepal Electricity Authority (NEA)

14. NEA expressed several concerns relating to SHP development: (i) timely transmission investment requirements to absorb power from these plants; (ii) additional financial burden on NEA during certain periods of the year resulting from underutilization of its own power plants while being forced to absorb power from SHPs due to transmission constraints; (iii) inability of these SHP power plants to deliver energy during the periods of power shortages; and (iv) suboptimal exploitation of the hydropower sites due to ad hoc development resulting from the absence of integrated river basin plans. The Mission informed NEA that these concerns would be conveyed to the Investment Plan consultants who would incorporate these issues and suggest solutions as a part of the Investment Plan.

Meeting with Commercial Banks and Financial Institutions

15. Members of the Mission held meetings with several banks, comprising top-tier and mid-size commercial banks and a development bank. All such banks expressed a strong interest in having access to an SREP-based private sector solution for SHP financing and also expressed some dismay about the lack of actionable information on the implementation of the program.

16. Access to long-term financing and high interest rates continues to be a major impediment to loan growth to the hydropower sector. Furthermore, liquidity of the banking system remains constrained causing numerous banks to fail meeting their capital and cash reserve requirements. This has caused the banks to push toward higher liquidity ratios by curtailing their lending, including in the hydropower sector. The banks indicated that there are a large number of SHP projects (over a hundred) in their

pipelines which are financially viable. Some of these projects require transmission lines or have developers which may not have the capacity or track record to execute, and therefore, the number of such projects which the banks may consider creditworthy could be materially lower. This warrants a closer look at the projects and the underwriting guidelines of the banks and their capacity to structure innovative project financing mechanisms, as distinct from traditional collateral based lending.

Approaches for SHP Component

17. During the Mission meetings with various stakeholders, different approaches to small hydropower development emerged: (i) Private sector led SHP development funded through commercial banks, (ii) Private sector led development funded through a Small Hydropower Fund (SHF) and, (iii) People's Hydropower Program (PHP) funded largely by local communities, District Development Councils (DDCs) and the Government of Nepal.

Private Sector Led SHP Development

18. Private sector led SHP development funded through commercial banks could avail SREP funding either directly from IFC/ADB private sector wing along with commercial borrowing, or through a financial intermediary arrangement with the participating commercial banks that would pass the SREP funds to the developers with or without blending. SREP funds could also be used to structure risk-mitigation instruments such as guarantees or to buy insurance under such an arrangement. They could also be used to mitigate foreign currency exchange rate risk. With minimum institutional interface and direct dealing with private sector developers, it is likely that this would be the fastest line of engagement on SHP component of SREP among all available options.

19. Government of Nepal has indicated interest in promoting greater participation by the local community in hydropower development in the country. To accommodate this interest, 5-10% of the project cost could be mandated as equity contribution from the local community, hydropower royalty and other government resources, with the private developer bringing in another 20-25% equity investment, while the remaining 65-70% is funded through commercial banks. Under such a structure, SREP resources could be used to facilitate greater commercial bank funding to several small hydropower projects. The mission met with some private developers who confirmed that such an arrangement would be acceptable. Indeed, such an arrangement could reduce the developer's risks by making local communities stakeholders in project development.

20. During the meeting with various stakeholders the need for a Small Hydropower Fund (SHF) was also emphasized. The main objective of SHF would be to channel funds from different sources for small hydropower development. The fund could in-turn either provide financing directly to SHP projects or to participating credit institutions (PCIs) which will then fund projects. In this regard, it is important that the experience of the Power Development Fund (PDF) under the World Bank funded Power Development Project is adequately reflected in the design of the project. Even in this approach, GoN's interest in community participation in SHP development can be applied.

21. During meetings with DoED, it was also agreed that related study on *"Review of Experience of the Power Development Fund"* should be expedited to capture and build upon the past experience.

People's Hydropower Program

22. Government of Nepal is planning to launch the People's Hydropower Program (PHP) which would mobilize resources from local communities, hydropower royalties, government funds (such as pension funds) etc to develop small to medium sized hydropower projects.[4] Under the proposed program, development of SHPs would be led by local government through the District Development Committees (DDCs). The design and development of projects would be handled by the Department of Electricity Development (DoED), and the projects would be handed over to the DDCs once completed. In the

[4] The Government announced this plan as a part of the budget speech in the parliament.

meantime, it is proposed that DoED's presence would be expanded to have regional offices located in the three major river basins that are proposed to be developed for hydropower. In addition, three sites have been identified for launching the pilot projects for PHP where DoED is planning to open site offices.

23. The Mission expressed concerns regarding the bankability of such projects, especially with regard to ownership structure, governance mechanisms, resource mobilization, project management capabilities, and sustainable operation and maintenance. Further, SREP funds must be leveraged at least 1:4 with other resources – especially commercial bank funding and private equity contribution in this case. Alternatively, GoN's plans for People's Hydropower can be accommodated as indicated in Para 17.

24. During meetings with DoED, it was also agreed that related study on *"Implementation Modalities for the People's Hydropower Program"* under the Technical Assistance component of the Power Development Project (PDP) of the World Bank should be expedited.

Proposed Institutional Arrangements for Small Hydropower Component

25. An indicative diagram of the institutional arrangements is provided in Annex-3. The proposed structure is subject to further discussions and agreement. It shows multiple channels for flow of funds and information to reflect the various options in approaches for the SHP component. These would be narrowed down during the formulation of the Investment Plan or thereafter.

MINI-MICRO ENERGY DEVELOPMENT

Single Program Modality

26. Most of the ongoing renewable energy interventions in Nepal would be completed in mid-2012, including the World Bank and UNDP funded Renewable Energy for Rural Livelihood Program (RERL)[5]; the DANIDA, NORAD, KfW and DFID funded Energy Sector Assistance Program-II (ESAP-II); and the World Bank GPOBA and KfW-funded Nepal Biogas Support Program. Government of Nepal has indicated a clear preference for developing and implementing a single program modality for all mini-micro renewable energy initiatives going forward. It is also contemplating a new institutional arrangement (the Central Renewable Energy Fund – described below) for channeling such investments.

27. Accordingly, several donors are currently developing the Rural and Renewable Energy Program (RREP), which is likely to entail donor commitment of a proposed US$ 180 million. The actual funding commitments under the RREP are yet to be approved by the respective donor countries. The donors likely to participate in the RREP are: NORAD, DfID, UNDP, DANIDA, KfW and SNV. It is planned that the donors would enter into a Joint Financing Agreement (JFA) for a five year program starting from 2012.

28. Government of Nepal plans to use SREP funds under the mini-micro energy component to implement the first such initiative using the single modality which shall be created in conjunction with the Rural and Renewable Energy program (RREP). This would allow donors of the RREP and other programs to converge towards the single modality going forward. It was agreed that the SREP Investment Plan consultants (and additional consultants to be appointed by the MDBs later) would work closely with the RREP consultants to develop the contours of the single modality. The consultants would also examine the proposed investments under SREP and RREP, as well as other programs to identify the respective roles of all of these programs.

Meeting with RREP Formulation Mission

29. The SREP Joint Programming Mission met with the RREP Formulation Mission which was independently visiting Kathmandu at the same time. The RREP Formulation Mission pointed out the need to integrate SREP activities into the institutions and governance structures being contemplated for the RREP. The SREP Mission agreed that this could certainly apply to the micro-mini energy initiatives

[5] The Renewable Energy for Rural Livelihood (RERL) program was earlier known as the Renewable Energy Development Program (REDP).

under SREP. The SREP mission also noted that the proposed SREP activities under this component – biomass (including biogas), small hydropower (including improved watermills) and solar – have a broad overlap with those supported by RREP (with the exception of improved cook-stoves which are included under RREP but not proposed for SREP).

30. The SREP Mission also noted that while "business as usual" under existing approaches has been effective for the current scale of operations, it may prove inadequate for the level of scale-up that is being contemplated now. Further, there may be opportunities to build price pressure for improved cost efficiency. Therefore, it is important that such additional approaches are explored which build upon current success but also enable the renewable energy market to achieve the next scale of development. Such approaches may include output based assistance, competitive procurement, geographical concessions, viability gap funding and other appropriate variants.

31. In the process of formulating the RREP, a fiduciary risk assessment of AEPC will be carried out. It was agreed that the MDBs participating in SREP will be kept informed about the assessment

Proposed Institutional Arrangements for Mini-Micro Energy Component

32. The mission discussed the options for the institutional structure for implementing SREP investments in Nepal. It was agreed that consistent with the Rural Energy Policy 2006, the overall program coordination across ministries would be done by the Rural/Renewable Energy Coordination Committee (RECC). The RECC would be chaired by Member, National Planning Commission (NPC) and would have ED-AEPC as the Member Secretary. The SREP Steering Committee – already constituted by the Government of Nepal and chaired by Secretary Ministry of Environment – would be responsible for coordinating and supporting the works of the SREP. The RREP Formulation Mission has suggested that the scope of the SREP Steering Committee be expanded to include all Renewable Energy engagements including the RREP. It may be therefore called Renewable Energy Steering Committee. While this arrangement is acceptable the Government needs to take necessary follow up action in time. The Steering Committee would have two sub-committees consistent with the two components of the SREP – (i) Micro-mini Energy Sub-Committee chaired by ED AEPC, and (ii) Small Hydropower Sub-Committee chaired by Ministry of Energy.

33. An indicative diagram of the institutional structure is provided in Annex-3 to this Aide Memoire. It shows multiple channels for flow of funds and information, which may be refined during the formulation of the Investment Plan or thereafter.

Central Renewable Energy Fund (CREF)

34. The MoEnv is planning to set up a Central Renewable Energy Fund (CREF) as mandated under the Rural Energy Policy of November 2006. The CREF would provide a platform for channeling all future renewable energy funding for both grid and off-grid energy interventions. The CREF would provide mechanisms for channeling grant as well as credit support to mini-micro energy initiatives supported by funding from multilaterals/bilateral as well as government agencies and other donors. Upon the formation of the CREF, other existing funds such as the Rural Energy Fund (REF), Micro-hydro Debt Fund and Biomass Credit Fund would be subsumed into the former.

35. Under the arrangements being contemplated, CREF would be closely linked to AEPC, though it would have a separate Board of Directors – possibly chaired by the Secretary of Ministry of Environment. It would be administered by an independent and professional fund management company recruited through international competitive selection. The CREF would be managed on a day-to-day basis by an Executive Director (ED) empowered by a high degree of autonomy. The ED would be contracted by the Fund Management Company.

36. MoEnv and AEPC suggested that AEPC could provide the secretariat for the CREF Board, thus playing a significant role in formulation of the operating modalities and later maintaining an oversight during program implementation. The fund manager would operate independently of AEPC's day-to-day

influence based on operating modalities provided by the CREF Board. AEPC could also serve as the technology advisor to the CREF. The Mission stressed that under such an arrangement, it would be important to clearly and effectively segregate the technical-advisory and the secretarial roles of AEPC. It would be important to assess the potential for conflict-of-interest situations under such an arrangement, where AEPC feeds into the technical aspects while also indirectly monitoring/supervising the performance of the Fund Management Company as the Secretariat to the Board of Directors.

37. Discussions with the RREP team informed the SREP Mission that the CREF is expected to carry-out the following activities, some of which are already being undertaken by the REF under the ESAP program:

a) Disbursement, management and monitoring of subsidy/credit to mini-micro energy projects.
b) Enhancing bankability of projects by presenting banking and financial institutions with pre-validated projects and arranging insurance as needed.
c) Providing capacity building and technical support to the partner Local Financial Institutions such as Cooperatives and Microfinance Institutions.

The SREP Mission confirmed that these functions were consistent with the expected role for the purposes of SREP.

38. It was agreed that the SREP funding for the micro and mini energy initiatives could be channeled through the proposed CREF. However, the necessary conditions for this would be: (i) timely setting-up of the CREF, (ii) an acceptable governance structure, and (iii) appropriate operating modalities. It was agreed that the Investment Plan preparation consultants would examine the proposed structure of CREF based on consultations with AEPC, Ministry of Environment and the RREP team. The Mission requested MoEnv and AEPC to share all relevant documents pertaining to CREF with the Investment Plan consultants.

Equipment Manufacturers' Views

39. While appreciating the initiatives of AEPC, manufacturers expressed their concerns in three areas; (a) lack of adequate manpower to process the large volume of applications received at AEPC, (b) a need for industry training programs to support implementation and operation of micro projects (companies are losing trained manpower to more lucrative markets), and (c) negative impact on the scaling up of micro initiatives due to uncertainty in the availability of subsidy.

40. *Solar Manufacturers*: The solar manufacturers informed the Mission that their delivery costs in rural areas were higher by nearly 40-50% given additional intermediaries, transport, installation and financing expenses. The current subsidy given to Solar Home Systems by AEPC (which is an aggregation of GoN and donor funds channeled directly to users through manufacturers/installers by AEPCs Rural Energy Fund) is between Rs.5000-10,000 depending on the size of the unit and accessibility of the location. These funds are not always available with AEPC and the distributor has to pre-finance this cost through bank borrowing.

41. *Biogas Manufacturers*: The biogas manufacturers indicated that while the pace of capacity addition was good, expansion in the present areas would be dictated by changes in socio-economic conditions and penetration of substitutes. To scale up, the scope for significant expansion would depend on the ability to penetrate new geographical areas and technology changes that could allow processing of waste in addition to cattle dung. Awareness building on the benefits to the local community from the slurry could improve the economics of projects. The subsidy for a biogas plant ranges between Rs 9000-15000 depending on size and accessibility of location. There was also a concern expressed that will the scaling up, future installations will be in more remote locations where the costs could go up considerably. It was also suggested that SREP should consider community/institutional biogas projects, where the success of community-based mini-hydro could be replicated.

42. *Mini-Hydropower Manufacturers*: The Mini-Hydropower Manufacturers' Association indicated that several installation companies (or developers) had been setup with the support from AEPC programs. They were of the view that the upfront subsidy provided by AEPC helped in the expansion of their projects. Their main concerns were (a) the stipulated time taken to implement projects (12-18 months) tends to be exceeded depending on extent of active participation of the user community, and (b) inability to enforce obligations on the user community (including tariff) made the projects risky, leading to abandoned opportunities and an exodus from the sector. The possibility of getting the VDC or DDC (with access to funds) to provide some form of guarantee on behalf of the user community to the micro hydropower installation companies was proposed as a possible solution this issue. The subsidy for 5kW-500kW micro hydropower is Rs 15,000 per household up to a limit of Rs 125,000 per kW per plant (the total cost of a typical plant is about Rs 250,000/kW). There is a limitation of 120W per household which effectively prevents any end user activities leading to a very low load factor averaging 25%. This seriously impacts on sustainability of the projects. Load factors can be improved by either by connecting to the grid or encouraging daytime end-user activities. There is also a need for scaling up of the technology, where the requirements have now emerged in low-head sites.

IV. CONCLUSIONS

43. The Mission in consultation with the GoN confirmed that the two areas of engagement under SREP will be (i) micro and mini energy initiatives and (ii) SHP development. The focus in micro and mini energy initiatives would be confined to micro/mini hydropower including IWM, biogas and solar power. Each of these components will involve investment as well as related capacity development interventions as appropriate including capacity building of local government (DEEU/S under DDC) for supporting decentralization of RE program in Nepal. The expected overall contribution from SREP would be US$40 million. The indicative split between the SHP component and the micro and mini energy initiative component would be $20-25 million and $15-20 million respectively. The Investment Plan preparation consultants will examine the available options and SREP requirements and propose an appropriate split when presenting the draft plan.

44. It is concluded that the implementation of SREP will be carried out under the overall advice and guidance of an SREP Steering Committee Chaired by the Secretary, Ministry of Environment. A sub-committee focused on Small Hydropower Development chaired by the Ministry of Energy will be constituted while another sub-committee chaired by AEPC will be formed to coordinate the activities relating to the micro/mini energy initiatives. There will be two separate funds used for channeling Small Hydropower and Micro-Energy Initiative components of SREP. The component related to micro energy Initiatives will be channeled through the CREF which will also be managed by an independent fund manager. This arrangement will remain effective until the AEPC will be mandated for facilitating the development of SHP up to 5 MW in the short term and 10 MW in the longer term with the needed legal, policy and institutional reforms of AEPC in place, when the option of both the funds being channeled through the CREF could be explored. The indicative structure for SREP implementation is given in Annex 3.

45. A menu of financing options to accommodate needs of Nepal will be prepared by the consultants following this AM. SREP financing for SHP may be channeled through private sector arms of the MDBs, and could potentially be utilized to be used as guarantees and/or foreign exchange risk cover to promote renewable energy investments which would otherwise fail to attract adequate capital or co-finance MDB loans or provide additional financing of new components within ongoing investment operations, on more concessional and commercially acceptable terms. This could be done through a line of credit to commercial bank or direct investment in a project. If the scope of AEPC expanded to small hydro power up to 5 MW in the short term and 10 MW in the longer term, the indicative structure can be revised accordingly.

46. The consultants appointed under SREP will use these conclusions as the basis for development of the Investment Plan.

V. NEXT STEPS

47. The Government indicated its intention to formally submit its SREP Investment Plan for approval at the SREP sub-committee meeting in October/November 2011. The preparation of SREP Investment Plan by GoN has already commenced with support from consultants. The following timetable was agreed upon to ensure the timely submission of the Investment Plan:

- By *late-August,2011:* Public consultation of SREP Investment Plan and submission for formal review by MDBs and an external reviewer
- By *mid-September, 2011*: 2nd (and conclusive) Joint SREP Programming Mission and finalization of SREP Investment Plan on the basis of comments received from the public consultations
- *By end-September, 2011*: Submission of SREP Investment Plan to CIF Administrative Unit

48. GoN will provide advice, guidance and all relevant information in relation to development of the Investment Plan.

49. The consultants appointed under SREP will prepare the draft Investment Plan in consultation with all the stakeholders in line with the above time schedule.

LIST OF ANNEXES:

Annex-1. List of Persons Met
Annex-2. List of documents collected/to be collected by Investment Plan Consultants
Annex-3. Proposed governance structure
Annex-4. Additional Information Obtained from Commercial Banks

Annex-1

List of Persons Met

National Planning Commission:
Hon'ble Member, Mr. Ram Kumar Sharma
Mr. Manahari Khadka, Programme Director

Ministry of Envioronment:
Mr. Krishna Gyawali, Secretary
Mr. Batu Krishna Uprety, Joint Secretary
Mr. Akhanda Sharma, Sr. Division Engineer

Ministry of Finance:
Mr. Lal Shanker Ghimire, Joint Secretary
Mr. Tilak Man Bhandari, Under Secretary
Mr. Bhuban Karki, Under Secretary
Ms. Anita Koirala, Section Officer

Ministry of Energy:
Mr. Balananda Poudel, Secretary
Mr. Sriranjan Lacoul, Joint Secretary
Mr. Raju Maharjan, Sr. Division Engineer

Nepal Electricity Authority:
Mr. Rameshwar Yadav, Officiating Managing Director
Mr. Tirtha Man Shakya, General Manager

Department of Electricity Development:
Mr. Mahendra Bahadur Gurung, Director General

Alternative Energy Promotion Centre:
Dr. Narayan Prasad Chaulagain, Executive Director
Mr. Raju Laudari, Manager Climate & Carbon Unit
Mr. Ram Prasad Dhital, Sr. Energy Officer
Mr. Bharat Poudel, Sr. Engineer
Mr. Samir Thapa, Sr. Energy Office
Mr. Narayan Adhikari, Engineer
Mr. Surya Kumar Sapkota, Sr. Planning Officer
Mr. Nawa Raj Dhakal, Sr. Training Officer

BSP-Nepal:
Mr. Saroj Rai, Executive Director

Centre for Renewal Technology/Nepal:
Mr. Subarna Kapali, Deputy Director

Energy Sector Assistance Program:
Mr. Niels Juhl Thomsen, Chief Advisor

Mr. Madhusudhan Adhikari, Manager Solar Energy Component
Mr. Rohit B. Shrestha, Admin and Finance Manager
Mr. Anand Raj Maskey, Manager, REF
Mrs. Karuna Sharma, Manager, Institutional Strengthening of RE Component
Mr. Devendra Adhikari, Manager, Mini Grid Component

Independent Power Producers Association Nepal:
Mr. Subarna Das Shrestha, President
Mr. Pradeep Gangol, Executive Manager
Mr. Kumar Pandey, Secretary General
Mr. Shailendra Guragain, Member
Dr. Damber Bahadur Nepal, Chief Executive Officer, Mai Khola
Mr. Bharat Nepal, Managing Director, RuRu Hydropower
Mr. Kiran Chiluwal, Project Engineer, RuRu Hydropower
Mrs. Pooja Dahal Neupane, Executive Director, Siddhakali Power Ltd.
Mr. Guru Prasad Neupane, Chairman, Arun Valley Hydropower Development Company

RREP Formulation Team:
Mr. Bjarne Larsor Korn
Mr. Ram Hari Lamichhne
Mr. Lokendra Paudel
Mr. Stuart King
Mr. Ueli Meier

Nepal Rastra Bank:
Mr. Bhaskar Gnawali, Executive Director

Everest Bank:
Mr. P. K. Mohapatra, Chief Executive Officer

Clean Energy Development Bank:
Mr. Manoj Goyal, Chief Executive Officer

Bank of Kathmandu:
Mr. Ajay Shrestha, Chief Executive Officer
Mr. Pushpa Raj Bhandari, Executive Manager
Mr. Vijay Gurung, Relationship Manager, Development Credit Unit

Nepal Investment Bank Limited:
Mr. Shivanth Pande, Head – Research and Development
Mr. Rajan Kumar Amatya, Deputy General Manager
Mr. Samyog Pradhan, Relationship Manager
Ms. Shreejana Pandey Rana, Relationship Manager

Kumari Bank Limited:
Mr. Radesh Pant, Chief Executive Officer
Mr. Sanjay Poudyal, Head – Corporate Strategy and Development
Mr. Bikas Khanal, Head – Credit Risk Management

Nepal Insurance Company Limited:
Mr. Keshab Dubadi, General Manager

Employee Provident Fund:
Dr. Ramesh Kumar Bhattarai, Administrator

Development Partners:
Ms. Federica Cimato, Economist (DFID)
Mr. Peter Eilschow Olesen, Deputy Head of the Mission (Embassy of Denmark)
Mr. Akio Endo, Representative (JICA Nepal)
Mr. Sourab Rana, Program Officer (JICA Nepal)
Mr. Bibek Chapagain, Energy Advisor (Norwegian Embassy)
Ms. Corinne Demenge, Programme Officer (SDC)
Mr. Thomas Krader, Renewable Energy Sector Leader (SNV)
Mr. Shoban Rainford, Partnerships Development Coordinator (SNV)
Ms. Bina Pradhan, Gender and Socio Economist
Mr. Brian Hardine, CC Specialist (UNDP)
Mr. Vijaya Singh, ACD (UNDP)
Mr. Shiva Paudel, Sr. PO, Danish Embassy

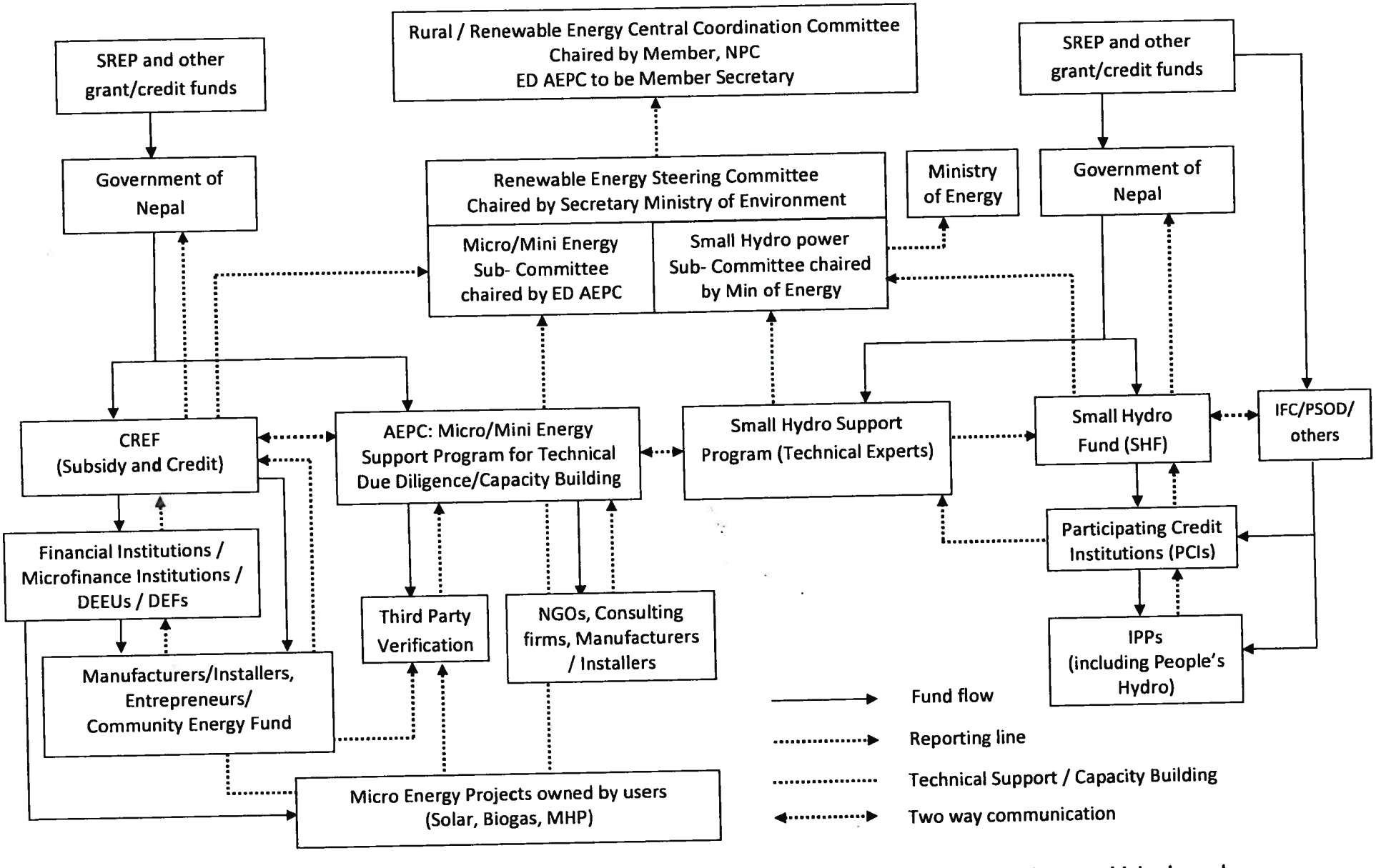
SREP Consultants:
Mr. Dino Deangelis
Mr. Jayandha Nagendran
Mr. Govinda Prasad Devkota
Mr. Jayatha Athalage
Ms. Nirja Rajbhandari
Mr. Ajoy Karki

Annex-2

List of documents collected/to be collected by Investment Plan consultants

1. Three Year Plan Document for Development of Alternate Energy
2. Draft AEPC Bill
3. Action Plan for Mitigating the Energy Crisis
4. Policy on Subsidy for Renewable Energy 2006 and 2009
5. Rural Energy Policy Document
6. People's Hydropower Concept Note
7. Assessment Report of the ESAP Program
8. Climate Change Policy, 2067
9. GoN's White Paper on Public-Private-Partnerships
10. Draft Strategic Organizational Plan (SOD) of AEPC
11. List of small hydropower projects under preparation

Proposed Institutional Arrangement for SREP in Nepal



The above diagram is indicative in nature and is subject to further discussions and agreement. It shows multiple channels for flow of funds and information, which may be narrowed down during formulation of the Investment Plan or thereafter.

Annex-4

Additional Information Obtained from Commercial Banks

1. The Mission members inquired with the banks on their Hydropower-project credit underwriting practices. The banks have indicated that their loan sizing is done on a cash-flow basis for a full amortization of the debt within a range of 10-12 years. The lending is secured by the underlying assets and also carries personal guarantees (on a joint and several basis) from the project shareholders. There appears to be adequate insurance capacity between local insurers and foreign re-insurers for all risks including business interruption, civil unrest, and terrorism risks. The underwriting is still a strong function of the developer and its track record. Loans are made on a 6month floating rate basis and at rates around 14-18%. One banks expressed a desire for a tax exemption on SHP lending income to allow additional flexibility to lower lending rates.
2. Most banks expressed interest in assuming the role of fund manager for such a scheme. This stems in part from the needs of the banks for third party capital to support their SHP transactions. These institutions expressed the need to raise funds from private investors for SHP and clean energy projects in general and therefore wish to establish track records as fund managers in this sector in order to grow assets under management. Recent legislation has permitted Commercial banks to establish mutual fund companies to offer such investment products, including private equity investments in SHP, going forward. The banks are unanimously against having any direct Government involvement in an SREP-based private sector solution. The reasons given were the risks of delay in implementation, redirection of funds to support government policy initiatives, and distortion of private sector terms and practices in hydropower transactions, and the general need for private sector development.