

# CLIMATE INVESTMENT FUNDS

SREP/SC.IS.2/Inf.3  
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Intersessional Meeting of the SREP Sub-Committee  
Nairobi, Kenya  
March 8-9, 2012

Agenda Item 7

**NOTE ON PROPOSED REVISION TO THE INVESTMENT PLAN FOR NEPAL**



### **Revision of Third Component of SREP Investment Plan of Nepal**

1. In response to the Summary of the Co-Chairs Meeting of the SREP Sub-Committee, Washington, D.C. November 1, 2010 Government of Nepal would like to revise third component of the Investment Plan. The Government was belatedly informed that the deadline to submit the revised proposal was 30 November 2011; however, this date was not communicated in advance and was also not mentioned at the Sub-Committee meeting. Therefore, Government of Nepal was not aware of this deadline and could not submit the revised IP by that date.

2. Although Government of Nepal faced difficulties in convincing its internal stakeholders to reduce SREP funds allocation for the third component and to reallocate funds to the second component, this has now been done consistent with the suggestion of the SREP Sub-Committee. Given the high socio-economic and environmental benefits, the internal stakeholders like to see SREP support for biogas promotion for different uses with focus on both social inclusion and commercialisation. There are two major revisions in the Investment Plan. The first revision is that USD 2 million out of USD 10 million allocated for the third component is proposed to be reallocated to the second component of the Investment Plan. The other revision is that the third component itself is revised from a largely household biogas program to an Extended Biogas Program consisting of: (i) biogas for waste-management, (ii) commercial & industrial biogas, and (iii) community & institutional biogas solutions. Apart from supporting investments in these areas, SREP funds would also be used for capacity building and technical assistance requirements for developing innovative business models and mitigating viability gap. While SREP funds would be directed towards pioneering and scaling up approaches in these focal areas, funding for household biogas component of the Investment Plan would be arranged through other sources including carbon finance among others. Government of Nepal believes that this proposed revision is very much in line with the objective of the SREP. Summary of the proposed revisions is elaborated below.

#### **i) Reallocation of 2 million USD to second component of the Investment plan**

3. The second component of the investment plan is Mini/Micro Initiatives: Off grid Electricity. Solar PV and micro/mini hydropower are the two sub components here. This USD 2 million is proposed to be reallocated to micro/mini hydro power sub component. This reallocated fund will be used to support the ongoing programs, and will be used to expand the existing allocations for credit for subsidy and technical assistance within this subcomponent of the investment plan.

#### **ii) Allocate 8 million USD for Extended Biogas Program (piloting and/or implementation)**

##### **a. Biogas from Waste**

Waste management has become a consistent issue in the municipalities, semi urban and peri urban areas, both for the public and private sectors. The production of biogas in such cases for heating applications and for electricity generation to feed into the grid has become a common practice in the developed and middle income countries. This practice now needs to be transferred to low income countries like Nepal. In terms of scale, these projects will be larger than industrial and commercial biogas installations that are mentioned in point-b below. Some of the private sector entities and communities involved in waste management have sought support from the AEPC in the past – but due to the lack of knowhow and skills regarding the technologies, as well as lack of resources to bridge viability-gap, AEPC has not been able to mobilize project partners and financial institutions to work in this area.

**b. Commercial Applications of Biogas**

Because of the short supply of electricity, especially in the dry seasons, a lot of the agro-industrial and commercial establishments are suffering. These businesses are using diesel generators to cope with the electricity shortages. This forces the industries or businesses to slow down or even close down their operations, when diesel is in short supply, which is a frequent phenomenon. A few examples of such businesses are the fruit or herb processing plants, poultry, dairy and slaughter houses – which are otherwise successful commercial practices in Nepal. There is a feasible potential of producing biogas in such applications for thermal and possibly also electricity purposes<sup>1</sup>. Based on the scale of these businesses, the energy generated may be either self-consumed, sold to nearby businesses or households could also be fed into the grid. An added and sought after benefit of biogas installation is that the industrial/commercial waste can be managed without fouling/affecting the surrounding environment. Also, the slurry produced is more acceptable as fertilizer; and can be even marketed – provided that business development services are integrated with the biogas productive use.

A short intervention with technical assistance for feasibility assessment, technical and project design, and for linkage with commercial banks for loan will be very effective to develop a commercial biogas sector with this new area of product line. This kind of portfolio diversification also helps the whole biogas sector in the country more commercially driven, sustainable and motivated for growth as well as innovation.

**c. Community and Institutional Biogas Solutions**

The household biogas program in Nepal has been reasonably successful. However, it has concentrated largely in single-house installations. On the other hand, there have been successful community biogas programs in many countries, for example, China. Community biogas programs allow the benefits of biogas (including energy access and better sanitation) to reach families who do not own enough cattle and land for plant construction to make a household level system viable. With a relatively large and shared biogas set-up which links to multiple households, energy and sanitation access may be expanded to several households, reaching the poor, more effectively. Such approaches require significant community mobilization, an area in which AEPC has demonstrated good capability in the past, particularly in biogas and micro hydropower development. In addition, such projects would require viability-support –especially in the initial period – which can be achieved through SREP funding. Such community biogas projects could also be designed with a slightly over size so as to have a productive end-use or micro enterprise component, either built-in or with linkages with other enterprise development projects. In this case, the technical assistance part also demands a detail study on the productive end-use of the gas as well as the slurry.

Many public and private institutions such as the schools, hospitals, army and police barracks, primarily in the rural areas, depend on the fuel wood to meet their thermal needs. At the same time they do not have adequate arrangements for disposal of bio-waste. The inclusion of institutional plants can therefore offset substantial fuel wood use, and also manage the waste generated in such institutions.

The size of the plants for community and institutional plants will not be as large as the ones for commercial applications. AEPC and other actors have supported some of the forthcoming

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<sup>1</sup> AEPC study on the potential in poultry industry shows an estimate of 10 MW of electricity generation. AEPC receives a minimum of 5 applications each month for support in such commercial applications.

institutions and communities on a piecemeal basis – but a planned and wider support can result in a substantial reduction in fuel wood use, better waste management, and social inclusion – with a single project intervention.

4. Consistent with the guidance from the Sub-Committee on developing interventions that are beyond business -as-usual and have a transformative impact, we shall channel the funding from SREP for productive uses/commercial applications, pilots for municipal, and community /institutional and applications as well as as well as promotion of household biogas promotion in low or zero penetration areas with a new approach of working with NGOs, CBOs, etc. mainly capitalising on their strengths and using the concept of business incubation with for technical assistance, subsidy, credit mobilisation and capacity building. Funding for the technical assistance and capacity building activities shall accordingly be included in the respective categories listed above.

5. We would like to propose SREP Sub Committee to approve this revised proposal. This small budget of US\$8 million in SREP grant funds for third component of IP will not be sufficient to cover all the program expenses for this component, but would indicate in-principle approval of this component. Such an approval would allow us to start project preparation on Component III, and would also give us a leeway to leverage additional funds from the Government of Nepal, bilateral donors, carbon finance and the communities, institutions and businesses as well as from credit from commercial banks in preparation for the proposed Extended Biogas Program. Project preparation will begin with technical analysis and feasibility study preparation of our three initiatives in the Extended Biogas program.

6. The indicative revised financial plan and proposed channelling of the SREP funds are shown in the table 1 and 2 below respectively.

*Table 1: Financing Plan (USD '000)*

Investment	GoN	SREP Original Allocation	SREP Revised Allocation	RREP (Estimated)	Other (Expected)	Private Sector Equity	Total (Estimated)	% of Total
Small hydro power		20,000	20,000		58,750	33,750	112,500	21.9
Mini & micro hydro	20,000	5,000	7,000	60,401	21,265	22,667	131,333	25.5
Solar home systems	18,750	5,000	5,000	56,395	19,855	25,000	125,000	24.3
Biogas	20,000	10,000	8,000	56,703	19,963	30,667	135,333	26.3
Other RETs	1,500			6,500		2,000	10,000	21.9
<b>Total</b>	<b>60,250</b>	<b>40,000</b>	<b>40,000</b>	<b>180,000</b>	<b>119,833</b>	<b>114,083</b>	<b>514,167</b>	<b>100</b>

*Table 2: Channelling of SREP Funds*

	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

7. As mentioned in the Investment Plan presented in November 2011, the SREP USD 20 million allocated for mini and micro energy initiatives will be disbursed through the Centre Renewable Energy Fund (CREF) and utilised as a grant for subsidies and Technical Assistance; and as loans through a revolving fund managed by CREF. The relative portions of grant and loan to end-users are yet to be finalized, but will be broadly in line with the ongoing mini and micro energy programs that have been operating successfully under AEPC's leadership for more than 10 years.

8. The Investment Plan will be revised accordingly, if the SREP Sub-Committee accepts this revised proposal. Government of Nepal would like to request the Sub-Committee to accept this revised proposal and allow us to proceed immediately to further development of the project.