

# SCALING-UP RENEWABLE ENERGY PROGRAM IN ETHIOPIA (SREP-Ethiopia)

## TERMS OF REFERENCE FOR THE JOINT MISSION

Proposed Dates: 18<sup>th</sup> - 28<sup>th</sup> October, 2011



## ***Executive Summary***

### **Objective and the Scope of the Joint Mission**

The main objective of the Joint Mission (“the Mission”) is to support the Government of Ethiopia (GoE) in designing the SREP Investment Plan (IP). In consultation with stakeholders, the Mission will (i) validate the suggested investment priorities, (ii) collect all the necessary elements to ensure the finalization of the IP and (iii) develop investment concept briefs of the projects that will enable the implementation of the IP under Phase 2

Dates of the Mission: The proposed dates for the joint Mission are from 18<sup>th</sup> to 28<sup>th</sup> October 2011 under the leadership of the GoE.

The Mission Composition: The World Bank (WB), the African Development Bank (AfDB), and the International Finance Corporation (IFC).

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### **Activities undertaken before the Joint Mission**

Since October 2010, various activities were conducted by the national team with support from the Multilateral Development Banks (MDBs). These were: (i) a Mission from the Environmental Protection Authority (EPA) visited Washington from November 6 to 12, 2010 to attend the first SREP pilot country meeting; (ii) the MDBs consisting of African Development Bank (AfDB), the World Bank Group (WB) and International Finance Corporation (IFC) conducted a Scoping Mission in February 2011 that was joined by Development partners, Department For International Development (DFID), Japan International Cooperation Agency (JICA), the Norwegian Agency for Development Cooperation (NORAD), the United Nations Development Program (UNDP), United Nations Industrial Development Organization, (UNIDO) and the United Nations Environment Programme (UNEP)

The Scoping Mission identified relevant ministries, other development partners, and key stakeholders who should interact during the Joint Mission, consolidated necessary documentation and held preliminary consultations with key stakeholders. The Scoping Mission agreed with the GoE on the scope of assistance needed for the preparation of the IP. Based on agreement reached during the scoping Mission, the Joint Mission is proposed to be held between the 18<sup>th</sup> and the 28<sup>th</sup> October 2011.

### **Activities to be undertaken during the Joint Mission**

The main objectives of the Joint Mission are: (i) conducting national stakeholders consultation (workshops and multiple meetings with stakeholders) to discuss the investment priorities proposed by the SREP National Commission; (ii) assisting the SREP National Commission in finalizing and validating the identified investment priorities; (iii) supporting the write up of the IP; (iv) supporting the design of the various program/projects' concept notes that will lead to the implementation of the SREP IP under Phase 2; and (v) initiating the work related to the IP environmental and social issues, as well as the development of the Monitoring & Evaluation (M&E) framework for the program.

### **Expected Results**

The main expected results for this joint Mission are: (i) the investment priorities are discussed and agreed on with national stakeholders; (ii) the IP is developed from information gathered during the workshop and meetings; (iii) draft program/projects' concept notes for the implementation of the IP are developed; and (iv) the preliminary draft M&E results framework based on the validated investment priorities, as well as the environmental and social work are developed.

## SREP Ethiopia –TORs Joint Mission

The documents expected by the end of this Mission are: (i) an *Aide Memoire* describing the process, key findings and recommendations of the Joint Mission, (ii) a draft IP which will include the results of the public consultations; (iii) the proposed investment priorities; (iv) knowledge management and capacity building activities for Phase 2 implementation; (v) a tentative schedule for implementation and the definition of the roles and responsibilities of the various stakeholders for the implementation of the IP; and (vi) draft programs/projects' concept notes for Phase 2 implementation.

**CONTEXT OF THE MISSION**

1. The Federal Democratic Republic of Ethiopia is endowed with immense energy resources particularly hydropower. Despite the abundance of these resources, the access to modern energy in the country remains low, with about 94% of the country energy consumption being met from mainly biomass. Domestic energy requirements in rural and urban areas of the country are mainly met from wood, animal dung and agricultural residues. The dependence on biomass has serious consequences on environment and the GoE is trying to reverse the situation by undertaking rural electrification programmes aimed at improving the access rate in the country. The country has initiated and is implementing interconnection projects with neighboring countries including Djibouti, Kenya and Sudan. Interconnection with Djibouti is already implemented.

2. The availability of renewable energy resources in Ethiopia provides an opportunity to modern energy use in the country provided that financing constraints are alleviated. In addition the need to engage the private sector is a decisive move in scaling up renewable energy investments to overcome economic and non-economic barriers. The growing share of the renewable sources in the generation system in Ethiopia's power sector development follows what is seem to be green development path. Despite the progress in renewable energy, a great number of barriers restrict the development of Renewable energy. The main obstacle is relatively higher investment requirements. In this respect SREP financing is expected to leverage additional financing from MDB's and bilateral agencies/banks.

3. The Climate Investment Funds (CIF) are aimed at promoting international cooperation on climate change and support the efforts of developing countries to mitigate the increase in greenhouse gas emission and adapt to climate change. Two funds were created under the CIF: (i) the Clean Technology Fund (CTF) to support projects and programs that contribute to the demonstration, deployment and transfer of low carbon technologies; and (ii) the Strategic Climate Fund (SCF), to support three programs with potential for scaled-up, transformational action aimed at a specific climate change challenge or sectoral response. The three programs are: (a) the Pilot Program for Climate Resilience (PPCR); (b) the Forest Investment Program (FIP); and (c) the Program for Scaling up Renewable Energy in Low Income Countries (SREP)

4. The SREP is aimed at demonstrating the social, economic, and environmental viability of low carbon development pathways in the energy sector. It seeks to create new economic opportunities and increase energy access through the production and use of renewable energy. The SREP program will enable Ethiopia to initiate the process to achieve low GHG emission development. This will be made possible by harnessing the renewable energy potential of the country.

5. The private sector, as the basis for economic growth, has an important role to play in promoting renewable energy development. By opting for an IP that combines public sector and private sector interventions, the SREP will work to remove economic barriers (among others) and increase private investments in support of achieving the

objectives of the SREP. Improved market and financial conditions, as well as strengthening of investors' confidence, could facilitate to low carbon energy pathway by stimulating public and private investments in renewable energy projects.

6. The SREP program will support both investments for capacity building to reform the institutional framework, and investments for infrastructure to deploy renewable energy equipment in the country. The IP will seek to:

- Create an enabling environment by implementing public policies and improve the legal and regulatory framework;
- Have a transformational impact on energy markets and increase access to energy by maximizing the social benefits and positive impacts on the fight against poverty;
- Leverage significant additional financing from MDBs, bilateral agencies/banks, and other public and private sources;

7. Ethiopia was selected by the SREP Expert Group set up by the SREP Sub-Committee to be a pilot country under the SREP due to; (i) country's willingness to meet the criteria and to achieve the objectives of the SREP; (ii) the country's potential and capacity to implement SREP; and (iii) sector-wide energy development strategies that are open to integrating renewable energy into energy access and supply enhancement programs or targets for large-scale renewable energy deployment.

#### ***PREPARATORY ACTIVITIES***

8. The GoE, supported by the MDBs, has undertaken a number of preparatory activities, including: (i) the mission to Washington DC during the SREP Sub-Committee Meeting and the first SREP Pilot Country Meeting in November 2010 Mission; (ii) the creation of a National Commission for the draft of the SREP IP ("SREP National Commission"; and (iii) the SREP Scoping Mission during which the agency responsible for SREP programming was identified, the Task Force and Consultative Group for the preparation of SREP were nominated, and consultations with national stakeholders were initiated

9. In November 2010, five members of the GoE attended the SREP Sub-Committee Meeting and the first SREP Pilot Country Meeting in Washington DC. During their one week visit, the members of the Mission, supported by the AfDB and WB, participated in several meetings to get a better understanding of the program, and increase the GoE's ownership of the SREP program.

10. As part of the Mission, a roadmap was agreed upon to ensure the Implementation of the following activities, all conducted between December 2010 and February 2011: (i) Appointment of a focal point for SREP in Ethiopia (ii) creation of a SREP National Commission ; (iii) and completion of the TOR for the Scoping Mission.

11. The Scoping Mission led by the AfDB consisting of the WB and IFC visited Ethiopia from 7<sup>th</sup> to 9<sup>th</sup> February 2011. The objective of the Scoping Mission was to launch the preparation of the SREP IP, including:

## SREP Ethiopia –TORs Joint Mission

- (i) Discussions with relevant GoE officials as well as officials of other relevant agencies concerning SREP;
- (ii) Identification of relevant ministries and key stakeholders for SREP activities;
- (iii) Discussion about the objectives of the SREP activities, its benefits and the modalities of implementation in Ethiopia to ensure a common understanding by all stakeholders;
- (iv) Preliminary stakeholders consultations regarding the requirements for developing the IP;
- (v) Agreement with the GoE on the next steps required for SREP implementation.

12. The Scoping Mission had extensive discussions with the SREP National Commission, led by Deputy Director General of EPA and SREP focal point for Ethiopia and with representatives of the Ministry of Finance and Economic Development (MoFED), Ministry of Water and Energy (MoWE), the Environmental Protection Agency (EPA), and Ethiopian Electric and Power Corporation (EEPCo). The Scoping Mission was also joined by observers from Department for International Development (DFID), Japan International Cooperation Agency (JICA), the Norwegian Agency for Development Cooperation (NORAD), the United Nations Development Program (UNDP), United Nations Industrial Development Organization, (UNIDO) and the United Nations Environment Programme (UNEP) who provided valuable inputs

13. It was explained to the GoE that to gain the endorsement of the SREP Sub-Committee, the IP must clearly demonstrate its transformative value within a broader strategic climate change framework and the IP should demonstrate how it will initiate transformative change in achieving national-scale outcomes and the delivery of SREP aims and objectives.

14. The Mission advised the GoE that while the SREP funding envelope is relatively small when compared with the investment needs of the Ethiopian energy sector, a well-developed IP presents an opportunity to leverage significant amounts of additional financing from development partners and especially from the private sector if relevant barriers are addressed.

15. The Mission also advised the GoE on the possibility of obtaining technical assistance for elaboration of the SREP IP. One option would be for Ethiopia to apply for a SREP Preparation Grant (up to a maximum of USD 1.5 million), which would come from the overall SREP funding envelope. However, it was also advised that there this may increase the time required for the development of the IP. However, alternatively there might be scope for assistance from bilateral donors, MDBs and UN agencies.

16. The Mission discussed with GoE the road map leading to the submission of the IP to SREP Sub-Committee. The GoE decided to take on the responsibility of preparing the SREP IP by using internal resources. If and when needed the GoE might request assistance to its bilateral and multilateral partners. The Mission came to a common

understanding about the relevance of undertaking wide-ranging consultation with relevant ministries, civil society, private sector and regional government as appropriate to ensure that the final IP has broad support and is based on a thorough understanding of the opportunities and constraints facing the energy sector.

17. The GoE informed the Mission about its decision communicated to the CIF Administrative Unit, on the 21<sup>st</sup> October 2010, regarding the national focal points. According to that letter, the EPA as the focal institution for climate change issues of the Federal Democratic Republic of Ethiopia will be responsible for formally coordinating and communicating with the CIF Administrative Unit. The EPA's Deputy Director, Mr. Dessalegne Mesfin, has been appointed as the focal point. It was also communicated that since the work that will be carried out is the scaling up of renewable energy the arm of the GoE that will be responsible for coordinating the implementation of the Program will be the Ministry of Water and Energy, where the focal point is Mr. Gosaye Mengiste. The Mission understood that the responsibility for drafting the IP rests with the Ministry of Water and Energy, working closely with the EPA and other relevant Ministries as appropriate. The final IP will then be submitted by the EPA to the SREP Sub-Committee. The Scoping Mission agreed with the GoE the indicative schedule and key actions to be taken and that the responsible agency for the preparation would be the Ministry of Water and Energy.

18. Following the Scoping Mission, the GoE and the MDBs have been working closely, especially to finalize and follow-up on the action items agreed in the *Aide Memoire*. The GoE is assisted by UNDP to review and finalize the IP. However, the Joint Mission cannot meet the date agreed (end of July 2011) due to time taken to finalize the draft IP

19. **Technical Mission.** On August 11<sup>th</sup> and 12<sup>th</sup> 2011, the SREP National Commission and MDB's held a number of conference calls to discuss the status of implementation of Phase I and the way forward regarding the finalization of the IP and its submission to the SREP Sub-Committee for endorsement. After a first evaluation of the first draft IP, the MDBs among themselves agreed on the importance and need of a Technical Mission to Ethiopia, prior to the Joint Mission, to discuss the prioritization of the preliminary investment projects proposed by the SREP National Commission, making sure that these are in line with the SREP Programming Modalities and well reflected in the IP. Furthermore, it will be a first opportunity to engage MDBs and the GoE on discussions regarding the most appropriate financing instruments, with a view to commit sufficient funding and leverage significant additional financing from MDBs, bilateral agencies/banks and from other public and private sources to achieve large scale renewable energy impacts. As a consequence, the parties involved agreed on a Technical Mission that was carried between 30<sup>th</sup> August and 2<sup>nd</sup> September. The Minutes of the mission are presented in Annex VI.

### ***JOINT MISSION ACTIVITIES***

20. **Validation of the Investment Priorities.** The Mission will collectively validate the strategic investment priorities for the scaling-up of renewable energy in Ethiopia. To do so and before the Mission the GoE will prepare a first draft of the IP. To attain

this objective it will: (i) assess electricity demand and needs; (ii) assess the renewable resource potential; (iii) construct and analyze the supply cost curve; (iv) define the investment objectives; (v) select technologies and business models; (vi) estimate investment and operating costs; (vii) identify the financing instruments; (viii) review the adequacy of policy, regulatory, and legal framework for renewable energy development; (ix) propose institutional/organizational arrangements for implementation; (x) establish capacity-building needs; (xi) assess risks and design mitigation measures; and (xii) develop the financing plan.

21. The GoE will present the proposed investment priorities and the outcomes of discussion with national stakeholders. During the Mission, a series of meetings will be held to discuss with stakeholders the proposed investment priorities and pre-identify projects for implementation under Phase 2 of the IP.

22. Development of Investment Concept Briefs. The IP will need to include investment concept briefs on individual projects to be supported under Phase 2. The investment proposals should address the criteria in Annex 2 as appropriate. A suggested outline for an investment concept brief is attached in Annex 3.

23. **Roles and Responsibilities of the GoE and the MDBs.** The Mission will be led and hosted by the GoE under the leadership of Deputy Director General of EPA and SREP focal point for Ethiopia.

**Table 1: Role and Responsibilities**

Task 1: Preparation of the Joint Mission	MDBs
Task 2: First draft of the IP	SREP National Com. (MoW&E)
Task.3: Mobilization of the Private Sector	EPA & MoW&E
Team 3: Reporting for the workshop	MDBs, EPA & MoW&E
Team 4: Write Up of the Mission Aide Memoire	MDBs, EPA and MoW&E
Team 5: Final IP	MDBs, EPA and MoW&E
Team 6: Supervision of the social and environmental work	EPA & MoW&E

24. The three MDBs will participate in the joint Mission. AfDB will be responsible overall coordination of the Mission, with support from the WB and IFC. Following discussions among the MBD’s, it was agreed that the responsibilities would be shared as mentioned in Annex 5. The needs (country readiness) and availabilities of experts will be reassessed two weeks before the Mission to ensure adequate technical assistance.

25. **Consultations with the stakeholders.** During the joint Mission, consultations with key stakeholders will be held in Addis Ababa, including national institutions/authorities, development partners, NGOs, local communities and the private sector. Consultation workshops as well as a series of meetings will be organized as part of the Mission to identify concrete opportunities for investment that could lead to large-scale deployment of renewable energy projects.

## SREP Ethiopia –TORs Joint Mission

26. Development partners will be involved in the Mission to provide inputs, contribute to the discussions on the investments priorities, and assess the opportunities for potential co-financing, among others. The development partners that have expressed specific interest in contributing to the Mission (e.g UNDP and UNEP) will be closely associated and included in the activities of the MDB experts. The Mission will consult the following stakeholders, either through meetings (group or bilateral), or as part of the planned technical workshop.

### Government Entities:

Ministry of Water and Energy  
Ministry of Finance and Economic Development  
Environmental Protection Authority  
Ethiopian Electric Power Corporation  
Ethiopian Electric Agency

### Civil Society:

Civil Society Network for Climate Change  
Forum for Environment  
Climate Change Forum - Ethiopia

### Private Sector Representatives:

Ethiopian Biofuels Ltd.  
Swan Management Plc  
Echnoserve ET  
Dventus Plc

### Development Partners:

AFD, DFID, GIZ, JICA, UNDP, UNEP, NORAD, and KfW

## **COMPOSITION OF THE MISSION**

27. The Mission will consist of experts from the AfDB, WB and the IFC. Including

- Senior Public Utilities Economist
- Senior Investment Officer / Chief Investment Officer
- Senior Energy Officer
- Financial Specialist
- M&E Specialist
- SREP Coordinator
- Senior Energy Specialists
- Financial Specialist
- Power Engineer
- Senior Environment Specialist
- Senior PPP Specialist
- Country Economist
- Senior Energy Specialist (off-grid and on-grid)

## SREP Ethiopia –TORs Joint Mission

- Gender and Social Specialist

The detailed roles of the Mission participants, including those from the GoE, are available in Annex 4.

28. In addition to MDBs experts and GoE staff, the Mission will be based on the broad participation of national stakeholders. The UN System will be closely associated to the Mission. This broad participation is designed to ensure ownership of the program and support its implementation by the GoE, national stakeholders and development partners

29. **Mission Schedule.** A preliminary schedule is proposed in Table 2 below for the Mission activities. This calendar will be further refined in the coming weeks and specific agendas will be developed for the workshop, working groups, various meetings.

SREP Ethiopia –TORs Joint Mission

**Table 2: Calendar of the Joint Mission – October 2011**

	Oct 18	Oct 19	Oct 20	Oct 21	Weekend	Oct 24
AM	10am: MDBs Meeting	Workshop : Plenary <ul style="list-style-type: none"> <li>•Opening</li> <li>•Presentation of the SREP</li> <li>•Presentation of the Draft IP</li> <li>•Presentation of the Investment Priorities</li> <li>•Q&amp;A</li> </ul>	9am to 11am  Workshop - Breaking out Sessions -Group 1: Private Sector Representatives -Group 2: Civil Society Representative: -Development Partners	9am: MDBs Meeting with the SREP National Commission  -Discussion on the Working Groups Reports -Analyze of Project Ideas	Site Visit / <i>Drafting of the Aide Memoire</i> / Others	9am: Meeting to start environmental and social work on the basis of the draft investment plan and results of the first week  11am: MDBs Meeting with the SREP National Commission to discuss the M&E framework on the basis of the draft IP
PM	2pm: Kick of meeting with the EPA and the Ministry of Water and Energy  4pm: MDBs Meeting with the SREP National Commission	2pm to 5pm:  Workshop - Breaking out Sessions -Group 1: Private Sector Representatives -Group 2: Civil Society Representative: -Development Partners	2pm to 4pm  Workshop – Restitution of the Working Groups made by MDBs and the SREP National Commission	2pm to 5pm  Workshop: Restitution of the working groups  5pm: MDBs Meeting	2pm: <i>Ad hoc</i> meetings	
18:00	MDBs Meeting	MDBs Meeting with the SREP National Commission	MDBs Meeting with the SREP National Commission	MDBs Meeting with the SREP National Commission	MDBs Meeting with the SREP National Commission	
	Oct 25	Oct 26	Oct 27	Oct 28		
AM	9am to 12pm: MDB Meetings and the SREP National Commission to discuss draft program/projects' concepts	9am: Review of the draft IP including the draft program/projects' concept notes	9am: Meetings with the M&E and the Social and Environmental specialists	9am to 12pm: <i>Wrap-up Meeting with GoE to review Aide Memoire and discuss the roadmap and final IP.</i>  <i>(including signature of the</i>		

SREP Ethiopia –TORs Joint Mission

				Aide Memoire)		
PM	2pm: Drafting of the <i>Aide Memoire</i> 5pm: Ad Hoc Meetings	2pm: Drafting of the <i>Aide Memoire</i> 5pm: Ad Hoc Meetings	2pm to 5pm: MDBs Meeting and the SREP National Commission to discuss the roadmap until the submission of a quality investment plan			
18:00	MDBs Meeting with the SREP National Commission	MDBs Meeting with the SREP National Commission	Finalization of the <i>Aide Memoire</i> and submission to the GoE during the MDBs Meeting with the SREP National Commission			

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**Annex I – Suggested structure of IP**

**I. Proposal Summary (2 pages)**

- Objectives
- Expected outcomes
- Program criteria, priorities and budget

**II. Country Context (3-4 pages)**

- Energy sector description (market structure, demand supply, and dispatch composition, electricity cost and pricing) incl. renewable energy status
- Gap/barrier analysis; needs assessment

**III. Renewable Energy Sector Context (3-4 pages)**

- Analysis of RE options (technology, cost, mitigation potential, barriers)
- Government plans or strategy for the sector (willingness to move towards renewable energy investments, existing or envisioned policy, regulation, plans, and resource allocation)
- Institutional structure and capacity (technical, operational, financial, equipment supply, information)
- Role of private sector and leverage of resources
- Ongoing/planned investment by other development partners

**IV. Contribution to National Energy Roadmap (2 pages)**

- Likely development impacts and co-benefits of SREP investment
- How SREP investment will initiate a process leading towards transformational low carbon growth

**V. Program Description (6-8 pages)**

- Capacity building and advisory services
- Investment preparation activities
- Technology deployment investments
- Parallel activities to be funded by other development partners
- Environmental, social and gender co-benefits

**VI. Financing Plan and Instruments (3-4 pages)**

## SREP Ethiopia –TORs Joint Mission

- Budget envelop for investments
- Costs and sources of funding
- SREP assistance (grant, concessional debt, etc.)
- Recipients of funding

### VI. Additional Development Activities (2-3 pages)

- Leverage complementary co-financing with other development partners such as bilaterals, private sector, and financial institutions

### VIII. Implementation Potential with Risk Assessment (2 pages)

- Country/regional risks - institutional, technology, environmental, social, financial
- Absorptive capacity for SREP and leveraged resources

### IX. Monitoring and Evaluation (1/2 page)

- Results framework table

## Annexes

Information should be included in annexes on the following areas:

- assessment of country's absorptive capacity
- stakeholder consultations
- co benefits
- existing activities in the field of renewable energy, particularly activities of other development partners

**Annex II: Criteria for the Sub-Committee to Assess the IP**

a) **Increased installed capacity from renewable energy sources:** A high priority for most low income countries is expanding their generation capacity in order to ramp up modern energy use and energy access. Therefore, SREP-funded investments should result in increased MW from renewable energy, as well as increased energy (GWh) per capita in the country.

b) **Increased access to energy through renewable energy sources:** SREP may support grid extensions and decentralized energy systems with a view to expanding the percentage of the population with access to non-fossil-fueled electricity. Investment proposals should demonstrate how the investments are part of the Government’s long term commitment to increasing energy access.

c) **Low Emission Development:** SREP may support the use of renewable energy technologies for electricity generation and services to replace fossil fuel technologies that would be deployed in a business-as-usual scenario aimed at substantially increasing commercial energy use in low income countries. In particular, benefits from SREP investments will often arise from “leap-frogging” technologies, in which low income countries will be assisted to mainstream renewable energy technologies into the overall energy system.

d) **Affordability and competitiveness of renewable sources:** Affordability is essential for increasing access and for ensuring the long term renewable energy market development. SREP funding should address clearly-defined cost barriers to adoption of renewable energy technologies, such as connection costs for rural consumers, higher capital costs of new technologies, transmission costs related to grid-connected renewables, and risk adjusted rates of return sought by investors.

e) **Productive use of energy:** SREP programs should promote the generation and productive use of energy.

f) **Economic, social and environmental development impact:** Investment proposals for SREP financing should demonstrate the generation of economic, social and environmental benefits.

g) **Economic and financial viability:** Investment proposals should demonstrate the economic viability of investments and the financial viability with the inclusion of time bound SREP resources.

h) **Leveraging of additional resources:** Activities should maximize the leverage of funds from other partners.

i) **Gender:** SREP investments should seek to strengthen the capacity of women to be active participants in the economic sector and avoid negative impacts on women

j) **Co-benefits of renewable energy scale-up:** SREP investments should include decreased air pollutants from energy production and consumption as well as the potential to reduce stress on forest resources. Investments and activities should elaborate on the potential positive effects on air quality and natural resource management through the adoption of renewable energy technologies.

**Annex III: Suggested Outline for an investment Concept Brief**

- Problem statement (1-2 paragraphs)
- Proposed contribution to initiating transformation (1-2 paragraphs)
- Implementation readiness (1-2 paragraphs)
- Rationale for SREP financing (1-2 paragraphs)
- Results indicators
- Financing plan
- Project preparation timetable
- Requests, if any, for investment preparation funding

**Annex IV: SREP GoE core team and Joint-Mission MDB Team Composition**

Note: Not all MDB experts will attend the Mission at the same time; areas of expertise will be used at best to complement each other. It is understood that the GoE is leading the Mission and that the MDBs and other development partners will provide support

SREP GoE Core Team (host)					
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**SREP –Ethiopia –TORs Joint Mission**

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AfDB	Mr. Monojeet PAL or Mr. Richard CLAUDET	Senior Investment Officer / Chief Investment Officer	Email: <a href="mailto:m.pal@afdb.org">m.pal@afdb.org</a>  <a href="mailto:r.claudet@afdb.org">r.claudet@afdb.org</a>	Tel +216 71103498 +216 71102666	
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**Annex V: Roles and responsibilities of MDBs during Phase I**

<b>AfDB/WB/IFC</b>		
<ul style="list-style-type: none"> <li>- Review draft IP and ensure it responds to guidelines’ requirements</li> <li>- Review and analysis of business plans from potential sponsors</li> <li>- Ensure linkages with ongoing or planned energy projects in Ethiopia</li> <li>- Contribute to the write up of the Aide Memoire and the MDBs’ report</li> <li>- Review Project and Program Concepts, including the financing instruments being proposed</li> </ul>		
<b>AfDB</b>	<b>WB</b>	<b>IFC</b>
<ul style="list-style-type: none"> <li>- Lead coordination of SREP Activities</li> <li>- Provide guidance and directions on the SREP</li> <li>- Supervise technical aspects/inputs related to the energy sector in Ethiopia jointly with the WB</li> </ul>	<ul style="list-style-type: none"> <li>- Supervise M&amp;E Framework</li> <li>- Supervise technical aspects/inputs related to the Renewable Energy sector</li> <li>- Provide technical support to prepare for the stakeholders meetings</li> <li>- Supervise the Environment and Social Analysis of the IP</li> </ul>	<ul style="list-style-type: none"> <li>- Private Sector scoping for investment opportunities jointly with AfDB</li> <li>- Structuring of potential investment opportunities</li> <li>- Review and analyses of advisory services opportunities for Private Sector Operators jointly with AfDB</li> </ul>



## SREP ETHIOPIA

### TECHNICAL MISSION

30<sup>th</sup> AUGUST TO 2<sup>nd</sup> SEPTEMBER

ADDIS ABABA

ETHIOPIA



PARTICIPANTS			
SREP National Team		Multilateral Development Banks	
G. Abayneh, Director Energy Studies, SREP National Team Technical Focal Point	MoWE	G. Elizondo, Senior Energy Specialist	WB
T. Alimayhu, Wind and Solar Specialist	MoWE	P. Bardouille, Global Product Specialist	IFC
S. Tamiru, Senior Energy Specialist	MoWE	S. Asfaw, Senior Energy Officer	AfDB
D. Mulatu, Project Manager	EEPCo	L. Azevedo, Energy and Financial Specialist	AfDB
A. Seifu, Geophysical Specialist	MoM		
W. Kabede, Wind Specialist	EEPCo		

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The Government of Ethiopia's (GOE) SREP National Team and the MDBs (African Development Bank, International Finance Corporation, World Bank) participated between 30<sup>th</sup> August and 2<sup>nd</sup> September in a number of technical meetings to discuss and agree on: (i) the prioritization of Projects to be included in the SREP Ethiopia Investment Plan (IP); (ii) overall GoE financing strategy and MDB co-financing opportunities; and (iii) the timeline for completion of SREP Phase Activities.

The specific activities undertaken and points discussed were as follows:

- MDBs gathered comments made to the draft IP during the week preceding the Technical Mission (TM) and shared these with the SREP National Team for their action. Annex II aggregates the list of comments provided by the MDBs to the SREP National Team.
- MDBs jointly reviewed the draft IP with technical staff from the Ministry of Water and Energy (MoWE), Ethiopian Electric Power Company (EEPCo) and the Ministry of Mines (MoM), in charge of Geothermal Exploration in Ethiopia.
- Both parties discussed in detail the prioritization of projects. The IP currently considers three projects for the SREP initial allocation and another two for the reserve. The prioritization of the projects was undertaken based on: (i) GoE's priorities; (ii) rationale for SREP support; and (iii) implementation potential by the MDBs. At the moment, the SREP initial allocation is envisaged to benefit the following projects:
  - (a) Expansion of Geothermal Power capacity to 75MW at Aluto Langano. Ethiopia has an estimated geothermal potential of 5 GW. Despite the significant potential and several advantages over the sources of power, only a fraction of the resources has been harnessed so far. The project will be implemented in two phases: (i) Phase I: exploration drilling and well testing; and (ii) Phase 2: appraisal, production drilling and power station construction. It is envisaged that SREP will finance Phase I (USD 26 million), while the World Bank and the African Development Bank, through its ADF window, and EFD of France will finance Phase II, expected to start in 2015. This is due to the fact that the Government of Ethiopia already has prioritized both IDA and ADF allocations until 2013.
  - (b) Wind Farm IPP. Ethiopia currently has an installed power capacity of 2 GW, the large majority being hydro-based. The country's 5-Year Growth and Transformational Plan Period (GTP) intends to add **8 GW** of energy by 2015, mainly in hydro. While this will

bring energy security to the country, it will make it more exposed to the risks of climate change, namely droughts. Therefore, in the long-term, the objective of the GoE is to expand its energy mix, aiming for a ratio of 90%-10% hydro to other renewable energies. This objective, coupled with the need to stimulate Private Sector participation in the energy sector of the country, has led the country developing a REFIT Tariff to encourage IPP entry into the market, and considering its first Wind Independent Power Production (IPP) project to be developed totally by a private party or in conjunction with the GoE (PPP framework). The project has a total estimated cost of USD 140 million for an estimated total capacity of 55MW. It is envisaged that SREP will contribute with USD 22 million to decrease costs through a capital buy-down grant<sup>1</sup> and to commission a wind measurement assessment through a project preparation grant as well as to prepare the relevant national entities to an international competitive tender process. IFC and the AfDB Private Sector are expected to co-finance 30% of the project's total cost. An effort will be made to raise co-financing from other senior debt providers.

(c) Extension of efficient Cook stoves (ECS) for the Domestic Market. Biomass fuels are the principal sources of energy in Ethiopia providing over 90 percent of total energy consumption in 2006, and are primarily used for cooking. This dependence is expected to continue in the short to medium term as significant shift to other sources will take some time to realize. This particular project is essentially the scaling-up of a previously World Bank-funded efficient cook stoves market development project, which is under implementation in six regions of the country and has shown remarkable acceptance and has resulted in the dissemination of 2.5 million ECS to date. The project aims to reach a further 9 million households by supporting private sector production and sale of these devices, and consumer awareness building of the technology, at a total estimated cost of USD 7 million. It is envisaged that SREP will be used as a grant amounting to USD 2 million, while MDBs will provide, on a best effort basis up to USD 3 million. The remaining of the finance will flow from the GoE (USD 1 million) and GEF (USD 1 million).

- Annex III includes a draft Financing Table.
- The draft Project Concept Notes for project (a) and (b) were presented by the SREP National Team and the key elements to be included were revised in conjunction with the MDBs. The SREP National Team will further refine and submit revised versions of these documents in line with our discussions.
- The draft Project Concept Note for project (c) will be developed by the SREP National Team in conjunction with the MDBs in the coming week. Both parties discussed how the Global Environment Facility (GEF) could play an important role in leveraging this project. The Ethiopian GEF Focal Point is a member of the Environmental Protection Authority.
- The MDBs provided the SREP National Team with two documents pertaining to geothermal energy and wind power to support the design of the Project Concept Notes, as well as a document on Public Private Partnerships to help the SREP National Team to better understand successful approaches to attracting private investment to the sector.

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<sup>1</sup> Other instruments will be considered during appraisal to maximize SREP additionality, while ensuring the endorsement of minimum concessionality.

- The MDBs proposed a new timeline for the completion of Phase I activities, which involve submitting the IP for SC consideration in February 2012; this is presented in Annex I and has been agreed by the SREP National Team. Previously, it was the SREP National Team objective to have the IP endorsed by the SREP Sub-Committee in November 2011. The reason for postponing the endorsement of the IP by three months is related to the significant activities that still need to be carried out.
- MDBs called the attention to the SREP National Team that the Results Framework needs to measure the outcomes of the SREP intervention and not the 5-year Growth Strategy.
- The SREP National Team emphasized that in the long-term the GoE's intention is to diversify away from hydro generation, despite the fact that currently the country has in its pipeline 6 GW of hydro energy, expected to be fully operational by 2015.
- The SREP National Team sees geothermal energy as the main priority followed by wind power. The country has significant potential on both resources. They shared with the MDBs a presentation of the status of GoE's various geothermal activities. They also facilitated a meeting between IFC and Reykjavik Geothermal, one of the concession holders of a number of geothermal exploration sites and an IPP that is currently negotiating a Power Purchase Agreement (PPA) for electricity expected to be generated from the Corbetti field; as the first IPP/PPA in Ethiopia, this will be closely watched by the private sector. The aim of the meeting was for the MDBs to better understand where private sector activities currently stand and to confirm key constraints faced by private developers.
- The MDBs noted that substantial technical and analytical work has already been conducted by the government and suggested to describe relevant results in the IP to help justify the prioritization and rationale for SREP funding in the activities proposed, including:
  - (a) Marginal abatement cost curve (McKinsey Study)
  - (b) Power sector supply curve
  - (c) Expansion Plan
  - (d) Wind resource mapping
  - (e) Solar and wind master plans (which will be issued before December 2011)
- The MDBs also suggested to include a succinct description of the legal and regulatory framework that affect renewables and private sector participation in the IP, including:
  - (a) Electricity law (whether IPPs are allowed)
  - (b) Feed-in Tariff Policy (design and status of approval, etc)
  - (c) Other relevant policy, legal, regulatory document

### Annex VI.I: Timeline for Completion of SREP Ethiopia Phase I Activities

#	Action	Timeline	Responsible Entity
1	SREP National Team to finalized revised IP taking into account MDBs Comments provided during Technical Mission	16 <sup>th</sup> September	SREP National Team
2	MDBs to assist the SREP National Team in drafting the first version of the Project Concept Notes	23 <sup>rd</sup> September	SREP National Team / MDBs
3	MDBs to provide further comments on the revised IP (#1)	23 <sup>rd</sup> September	MDBs
4	SREP National Team to finalize another iteration of the Investment Plan ahead of the Joint Mission	12 <sup>th</sup> October	SREP National Team
5	Joint Mission	18 <sup>th</sup> – 28 <sup>th</sup> October	SREP National Team / MDBs / Other stakeholders
6	MDBs to draft and obtain signature of the JM's <i>Aide Memoire</i>	28 <sup>th</sup> October	MDBs / MoWE
7	MDBs to draft JM report to be published on the CIF's website	By end November	MDBs
8	SREP National Team to include the JM findings on the IP (MDBs will continue to cooperate in the improvement of the Project Concept Notes)	Mid-November	SREP National Team / MDBs
9	MDBs to finalize in cooperation with the SREP National Team the M&E framework	Mid-November	MDBs / SREP National Team
10	MDB's to provide feedback on the last version of the IP / SREP National Team to address comments if any	End-November	MDBs / SREP National Team
11	Online Consultations of the IP	First 2 weeks of December	SREP National Team
12	Beginning and completion of the <u>External Independent Review</u>	Between early December and Mid-January	Independent Reviewer / SREP National Team
13	<b>IP's Endorsement by the SREP Sub-Committee</b>	<b>Mid / Late February</b>	<b>SREP National Team / SREP SC</b>

## **Annex VI.II: Comments Provide by MDBs to the Draft IP**

Overall, it is important to ensure that the Investment Plan clearly articulates a) how the proposed activities fit into the GTP and the GoE's Energy Strategy; b) the current status in terms of implementation of these projects (where the GoE stands in terms of financing and other critical components (e.g. legal and regulatory framework); c) the key gaps in terms of what it will take to successfully deliver on each project; and d) the role of SREP in closing this gap. It is in this context that the following comments, in no particular order, are proposed as a means of strengthening the current draft IP.

1. A paragraph needs to be added regarding the implementation potential of the program and whether the parties involved (e.g. EPA, MoWE, EEA, and EEPCO) are prepared to manage the implementation of the projects. Perhaps the risk analysis section is the right place to include it;
2. Aside from the Project Concept Notes, the IP needs to include the following annexes: (i) an assessment of the country's absorptive capacity, by explaining the macroeconomic, institutional, technical and managerial dimensions (e.g. what is the country debt distress level according with IMF?); (ii) a description of current RE operations in the country and donors/financiers involved;
3. The IP is very good in diversifying from Thermal Generation but the country's exposure to hydro will grow. This will make the country more vulnerable to the effects of climate change (e.g. droughts). It would be useful to explain any concerns related to increased hydro dependence;
4. Expected Outcomes: This section should focus on the SREP contribution to the GTP rather than the GTP itself. The same applies to the Results Framework Table.
5. We need to explain how the SREP will have a catalytic/transformational effect. There are many parts of the document where this can be written.
6. Programme Criteria, priorities and budget: The IP should be more specific in terms of priorities that lead to the current proposed investments (e.g. energy access, energy security, enabling environment, etc.). The priority highlighted in (i) is really the main one?
7. Financing Table: 8 projects are too many. The SC expects IPs to have between 2 and 4 projects.
8. Wind PPP Project could benefit from IFC and AfDB Private Sector co-financing under a non-recursive financing structure. This would mean a good leverage of SREP resources.
9. How do you view Private Sector financing? Why are private sector contributions higher in phase II rather than phase I?
10. Table 2 under section II: What "based on candidates" means? "Future" is when?

11. Why there is no more wind development between 2015 and “Future”? The GoE foresees the installation of 772MW between now and 2015? What is the link between the pilot and achieving the 772MW?
12. Electricity Tariff: What is the gap between tariff and the generation costs? How will this be addressed?
13. Barrier Analysis: There is a need to bring the barriers analysis to a project level. What are the specific gaps (both financing and other, e.g. legal, regulatory)? How will SREP help address (unlock potential or eliminate/mitigate the barriers) the challenges outlined in this section?
14. Renewable Energy Sector Context: It would be important to see an analysis regarding potential and cost for each technology;
15. Section III, paragraph e): This paragraph goes against what it is shown in table 2 under Section II, which shows an increase in concentration of Hydro energy. SREP could be used to drive the country away from Hydro energy (not totally off course though);
16. The table under Section III only presents Hydro growth... This needs to be addressed to include other sources of RE;
17. Throughout the document there is a need to differentiate between large and small hydro;
18. It will be valuable to have as an annex a more thoroughly analysis on the feed-in-tariff currently being drafted;
19. Section III – Capacity Building: How the national development policies presented in this paragraph are in line with the promotion of RE?
20. Institutional Structure and Capacity: How about EPA? How about discussions PPAs and concessions? Current IPPs in the pipeline or foreseen?
21. Section IV: Access to electricity is not discussed. Check the third sentence on first paragraph. The statement needs to be consolidated throughout the document.
22. Section V – Programme Description: Regarding the capacity building and advisory services, there is no analysis linked to private sector development? (e.g. enabling environment, legal and regulatory framework, international standard PPAs and Concessions, etc.)
23. The IP should include a supply/cost curve analysis. Also, the selection of the projects shall be based on other factors such as: (i) potential; and (ii) diversification.
24. Financing Plan and Instruments: The paragraph on Private Sector is very incomplete and needs to address other points.

25. Recipients of Funding: Why not align this paragraph with the SREP Programming modalities which states *“Programs may be executed through government and sub-sovereign agencies, financial intermediaries, private sector or civil society organizations. Programs should build local and national implementation capacity and institutions. Programs should address the viability of the proposed implementation model, including models to engage the private sector.”*
26. Section VIII – Implementation Potential with Risk Assessment: It would be helpful to have a Risk Matrix outlining the main risks on a project by project level; currently, they are very general. Furthermore, in the current analysis, wind and geothermal is not taken into consideration.
27. It appears that the private sector is already playing an important role in the production and sale of cook stoves. In “distributing” an additional 9 million improved cook stoves to households, will the private sector be leveraged (i.e. will this lead to market development) or will this be a strictly public sector effort? What is the rationale of the decision?
28. Promotion of solar lanterns, solar water heaters, and solar cookers is mentioned only in passing in the Financing Matrix. Beyond this, how this fits into the bigger strategy, program components and how they will be delivered are unclear.

**Annex VI.III: Draft Financing Table(in USD million)**

#	Project	Total Cost	GoE	SREP	AfDB	WB	IFC	AfDB PS	GEF	PS Equity	Others
1	Expansion of Geothermal Power capacity to 75MW at AlutanoLangano.	306	50	26	80	80	-	-	-	-	70
2	Wind Farm IPP	140	-	22	-	-	40	40	-	42	-
3	Extension of Improved Domestic and Institutional Stoves and Dissemination of Household Bio Fuel (Ethanol) Stoves and Bio Oil Presses	7	1	2	1	1	1	-	1	-	-
		<b>453</b>	<b>51</b>	<b>50</b>	<b>81</b>	<b>81</b>	<b>41</b>	<b>40</b>	<b>1</b>	<b>22</b>	<b>70</b>