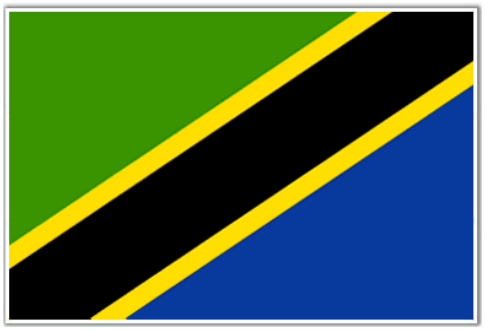
JOINT MISSION AIDE MEMOIRE

SCALING-UP RENEWABLE ENERGY PROGRAM IN LOW INCOME COUNTRIES

SREP - TANZANIA



March 18 to 22, 2013

INTRODUCTION

1. Following the SREP Tanzania technical mission in January 2013 and the submission of the updated SREP Investment Plan (IP) in February, an MDB Joint Mission ("the Mission") visited Tanzania from March 18-22, 2013. The main objective of the mission was to support the Government of Tanzania in fine-tuning the SREP Investment Plan. In consultation with the national stakeholders, the joint mission was to specifically (i) validate the suggested investment priorities, (ii) review all the necessary elements to ensure the timely finalization of the Investment Plan and (iii) assist in developing the concept notes of the projects that will enable the implementation of the Investment Plan under Phase 2. The Mission was led by the African Development Bank and included representatives from the World Bank and International Finance Corporation. The Mission's members are given in Annex 1.

2. The Mission expresses its deep appreciation to the Government and all parties met (public institutions, civil society organizations, private sector representatives, development partners) for their interest in this program and the quality and transparency of the discussions. Annexes 2, 3 and 5 provide the names of the officials and stakeholders met during the mission.

3. The Mission would like to acknowledge the commitment of MEM, and to commend the very good work that the Government has done in reviewing and finalizing the draft SREP Investment Plan.

MISSION ACTIVITIES

4. The Mission was received by Mr. Edward Leonard Ishengoma, Assistant Commissioner for Renewable Energy at the Ministry of Energy and Minerals and SREP National Focal Point; then, it conducted several meetings with various stakeholders in accordance with its terms of reference.

5. The Mission worked closely with the SREP Task Force and reached agreement on the final adjustments to finalize the IP, and more specifically the projects' concepts. The concepts have been approved by the SREP Task Force.

6. The Mission also met with Development Partners to get a better understanding of the future collaboration with them on the proposed investments. See Annex 2 related to the stakeholders met during the mission. Donors expressed their great interest in supporting the SREP proposed investments, either through better coordinating related activities or co-financing some of them. More specifically:

- The following partners expressed interest in working with the GoT and AfDB on geothermal development: DFID, UNEP, JICA, German/Icelandic/US cooperation.

- The following partners expressed interest in working with the GoT and WB/IFC on the off-grid component: DFID, SIDA, NORAD, and European Union.

7. A two day workshop focused on geothermal development was organised jointly by the AfDB and the British High Commission on March 13-14, 2013. The workshop gathered participants from various government institutions, private sector, legal, banking etc. (Annex

5). They discussed the legal and regulatory framework needed for geothermal development in Tanzania. The workshop was successful and the follow-up activities will include the preparation by the Government of a roadmap for geothermal development, focusing on the institutional framework to be put in place; the policy, legal and regulatory frameworks to be prepared in order to attract private investors; and the capacity building activities needed to efficiently lead geothermal development in the country.

8. A one day SREP consultation workshop was organized with national stakeholders on March 20th, including Government officials, development partners, private sector representatives, and CSOs. The list of people attending the workshop is available in Annex 3, and the program is available in Annex 4. The workshop offered the opportunity for the SREP National Focal Point to present the proposed investments to the stakeholders and to get their comments/inputs to improve the final version of the Investment Plan. Specific outcomes of the workshop are reflected below.

9. Finally, the Mission organized a dedicated meeting on Monitoring and Evaluation. The objective of the meeting was to assess the existing sector M&E system in place, to further explore the needs of MEM to strengthen its system and capacities, and to agree on key activities that would form the SREP M&E component. Findings are reflected below.

10. The key elements of the Investment Plan and the Aide Mémoire were discussed at a meeting chaired by the Permanent Secretariat the MEM, Mr. Eliakim C. Maswi, in March 21st, 2013.

MISSION FINDINGS AND AGREEMENTS

11. **Finalisation of the SREP Investment Plan**. The GoT and the Mission reached agreement on the final changes to be made to the draft Investment Plan. It was agreed that the draft final version would be issued by early April. The draft final version should be made available on the MEM website for two weeks for public consultations, and provided to the independent reviewer as per the SREP requirements. The schedule for SREP IP submission is as follows:

- GoT discussions: April 5 - 17, 2013
- Public disclosure: April 17 – May 1, 2013
- Independent Technical Review: April 22 – May 1, 2013
- MDB Final Review: May 1 – May 10, 2013
- Final revision of SREP IP, editing and printing: May 10 – 20, 2013
- Submission to SREP Subcommittee: May 20, 2013
- Proposed SREP Subcommittee consideration of the Tanzania SREP IP: June 2013. The MDBs request the SREP to convene an extraordinary session in June, for consideration of the Tanzania SREP IP, so that approval of the IP will not be delayed until the November SREP Subcommittee meeting.

12. **SREP IP Priorities**. MDBs acknowledged that the main priorities that are identified in the final draft of the SREP IP are relevant and appropriate. The two investment project priorities are:

- ***Geothermal Development Project:*** its objective is to make geothermal energy a low cost, reliable and significant contributor of electric power to Tanzania, to be developed by the private sector with public sector support targeted to overcome the riskiest phases of development. It will achieve this goal by: (1) creating the enabling environment and strengthening institutional and human resource capacities; (2) reducing development risks by financing the riskiest stage of resource exploration and confirmation; (3) providing transaction advisory services to ensure that the sites with proven resources are competitively awarded. Once the resource is confirmed and power development projects are awarded, SREP and other financing partners will contribute to power development by (4) providing risk mitigation and/or other forms of co-financing for the power development phase. The total estimated cost is US$465 million of which US$400 million is for the 100 MW geothermal power plant which would be built, owned and operated by the private sector or under PPP arrangements, once the geothermal resource is confirmed. US$25 million is sought from SREP with about $45 million from the AfDB. Private sector, other development partners and commercial banks provide the balance. Leverage of other funding to SREP funding is about 15. MEM is expected be the lead GoT agency responsible for its implementation.

- ***Renewable Energy for Off Grid Electrification Project:*** its objective is to build an efficient, responsive and scalable off-grid rural electrification project development infrastructure and demonstrate its effectiveness by supporting a time-slice of private sector investments in off-grid electricity enterprises. The project supports the GoT plan to increase electrification access rate from 18.4 percent to at least 75 percent by 2035 (Power System Master Plan, 2010-2035) through leveraging renewable energy resources for rural electrification as renewable energy is typically the least cost technology in remote areas. REA will be the lead GoT agency responsible for its implementation. SREP and other co-financing will support the provision of transaction advisory services, investments in mini-grid, micro-grid and stand-alone renewable energy-based rural electrification, risk mitigation to cover delayed payments by power purchasers, and knowledge management and capacity building. Total estimated cost is US$160 million, of which US$25 million is sought from SREP with about $50 million to be sought from the World Bank Group. Private sector, other development partners and commercial banks provide the balance. The project is expected to result in investments of about 47 MW of renewable energy plants, to benefit over 100,000 households and rural enterprises directly with electricity connection, and over 300,000 indirectly through the development of investment pipeline. Leverage of other funding to SREP funding is 5.5.

13. **Leveraging SREP resources**. The Mission obtained agreement in principle from development partners (subject to confirmation from their management) for either strong collaboration on related activities, or future parallel or co-financing for the proposed investment projects. At this stage, the total budget of the SREP Tanzania program is expected to be about USD 625 million (to be confirmed). For the geothermal component, DFID, UNEP, JICA, the Icelandic and German cooperation (ICEIDA and BGR), as well as the US-East Africa Geothermal Partnership confirmed their interest in joining forces for

geothermal development in the country, according to the requests they will receive from GoT. For the mini-grid component, DFID, NORAD, SIDA and the European Union confirmed interest to work jointly towards meeting SREP targets. A significant portion of the leveraging is expected to come from the private sector: on the one hand, the development of geothermal power projects is expected to come as a result of SREP support for upstream sector development and geothermal field exploration and confirmation; on the other hand, addressing barriers to investments in mini-grids, micro-grids and stand-alone energy solutions through targeted support is expected to facilitate further private sector investments. The appetite for investment, even under the current challenging environment, is evidenced by the pipeline of private sector led small power projects targeting remote and isolated areas. As of March 2013, 18 renewable energy based projects that have signed a standardized power purchase agreement (SPPA) or letters of intent (LoI) with TANESCO. At least three of these projects plan to build their own mini-grids to electrify additional communities, and six of them plan to sell power to Tanesco's isolated grids. In addition, a number of isolated mini-grids are under development, first two (supported by GVEP international) expected to reach financial closure by the end of the year. SREP plans to support similar and related projects not only to leverage private sector resources, but also to ensure that interventions translate into sustainable and scalable business models.

14. **Public consultations and stakeholders' buy-in.** On March 13-14, the Government of Tanzania hosted a "Geothermal Legal and Regulatory Framework" workshop. During the two day workshop, government officials, private developers, geothermal resource survey specialists, development partners, lawyers, and civil society representatives had extensive discussions. They offered valuable suggestions for strengthening the investment climate for geothermal development, including:

- Legal and regulatory framework: (i) The Government must explicitly include geothermal energy as a development priority in the updated Energy Policy and the new Renewable Energy Policy; (ii) Geothermal power must be considered as a viable supply source while updating the Power System Master Plan; (iii) prepare a Geothermal Act and associated regulations to guide the development of the sector and attract private investors.
- Institutional Framework: (i) A Geothermal Division should be established within the Department of Energy in the Ministry of Energy and Minerals, to ensure that geothermal development is well integrated with energy development and receives the necessary attention; (ii) there has to be clarity on the roles and responsibilities of the public and private sectors in various aspects and geothermal development, from resource exploration, to power development; and (iii) the Geothermal Division appropriately staffed with competent experts.
- Capacity Building: Tanzanian geothermal development capacities are presently weak with only about 8 specialists trained. If the potential of geothermal energy is to be realized, human capacity in both public and private sectors must be strengthened. Expertise is required in geothermal resource development, planning, power development, project finance, and project management and social and environment safeguards expertise.

15. On March 20th, the GoT hosted a SREP consultation workshop that gathered about 60 participants from GoT agencies, private sector, NGOs, development partners, etc. The GoT took the opportunity of the workshop to present the proposed investments to national stakeholders and encourage them to provide further inputs and comments. Three working

groups were organized to discuss some aspects of the IP in more details. The outcomes of the workshop discussions are as follows:

Group on Renewable Energy for Off-grid electrification

16. The mission had extensive group-level discussions with stakeholders in the off-grid electrification space including TANESCO, REA, private sector developers, financiers and development partners. Tanzania is emerging as one of the few SSA countries with a viable mini-grid program where mini-grids are operated by private companies that could be scaled up. TANESCO has signed Small Power Purchase Agreements (SPPA) with 11 developers for 46.1 MW. Three are already selling power to TANESCO. Furthermore, TANESCO has signed 7 Letters of Intent, a precursor to signing the SPPA, with 30.9 MW of projects. The participants strongly endorsed the proposed scale up of small renewable energy projects and off-grid electrification proposed to be supported by SREP (US$ 25 million) and the associated co-financing from MDBs/donors and the private sector. In particular, the following points were made:

- Availability of renewable energy resources, increasing electricity demand, the supportive Government vision and the readiness among private sector players create viable opportunities for expanding renewable-based off-grid electrification solutions. There was consensus that Tanzania should support development of renewable energy technologies for rural electrification.

- Private and non-governmental developers will invest in mini-grids to supply electricity if major barriers are eliminated. SREP project must help eliminating these barriers which can be generally categorized as (i) financial, (ii) regulatory and institutional, and (iii) informational.
  - Financial barriers include the limited financing options coupled by the prevailing off-taker risk. The stakeholders were of the opinion that the off-taker risk has less to do with payment defaults but takes the form of delayed payment. Additionally, many developers have strong technical skills but possess modest entrepreneurial experience, especially in designing attractive project or corporate finance structures. This creates the need to enhance the capacity of project developers to access finance, and that of local financial institutions to support renewable energy.
  - Regulatory and institutional barriers include complex and unclear processes for land use decisions, water rights, environmental, physical infrastructure planning, public-private partnerships, taxation regimes and business licencing. The government agencies and regulators are already taking commendable steps towards addressing most of these issues although more needs to be done especially in demystifying the regulatory framework from the developers' perspectives.
  - Information barriers include the lack of specialized skills and tools for assessing and forecasting renewable energy resources as well as demand side dynamics. Resource mapping, availability of technology experts and demand side forecasting would help cover key information barriers faced by the project developers.

- The GoT explained that for mini-grids, the IP proposes the establishment of a risk mitigation facility to guarantee timely payments to developers complemented by a

credit line facility administered through commercial lenders. A transaction advisory services facility is proposed to address firm level barriers including pre-implementation support, resource and demand-side information gaps, technical capacity constraints and business model design. Services will be offered on a cost-sharing basis with the project developers. In addition, the SREP will scale up the existing instruments already established under TEDAP, mainly the credit line for small renewable energy projects and performance grants for mini-grid connections.

- For individual systems, the IP proposes to scale up Sustainable Solar Market Packages, which have been already piloted by REA, which combine electrification of public institutions in off-grid rural areas with performance-based incentives to the private sector to market solar home systems and lanterns to households and businesses.

17. Participants welcomed these proposals.

Group on Geothermal Development

18. For the geothermal component, several potential activities to be undertaken with SREP support were discussed with the stakeholders. The participants endorsed the proposed activities for the development of geothermal in Tanzania to be supported by SREP (US$ 25 million) and the associated co-financing from MDBs/donors and the private sector. In particular, the following points were made:
    - *Geothermal strategy and roadmap, and capacity development*[1]: several donors such as KfW/BGR, ICEIDA, JICA, UNEP and DFID expressed interest in supporting this activity alongside SREP. During the preparation phase of the SREP-funded project, cooperation will increase in order to facilitate synergies and avoid unnecessary overlap.

    - *Geothermal resource confirmation and feasibility assessment*: JICA has expressed interest in conducting initial analysis of the geothermal sites in Tanzania up to the pre-feasibility stage. SREP will conduct further feasibility analysis to confirm the resource.

    - *Increasing development success rate:* Stakeholders agreed that parallel investigation of a number of sites up prior to exploratory drilling, that are not "geothermally" related is important to increase the chance of success of discovering fields with good geothermal prospects. Exploratory drilling in about three unrelated sites is also recommended rather than focussing all attention in one site.

    - *Power generation project development:* SREP financing will provide financial assistance for transactional advisory services along with AfDB funding for transmission lines, etc. Geothermal experts pointed out that the production well drilling and power generation investment cost estimate in the SREP IP of $4000 per kW may be too low as the geothermal fluid temperatures are expected to be in the 220 C° range (unlike in Kenya where it is 350 C°). A more appropriate estimate would be about $4500-5000/kW.

[1] See page 4 paragraph 14 for more information on the activities to be undertaken.

- *Power project investment and operation:* The stakeholders agreed that the proposed SREP and AfDB risk mitigation facility to cover electricity payment delay risk are needed to encourage private sector participation in IPP development and to offer electricity tariffs at competitive rates. Access to long term financing is also required. If the private sector is to absorb all these risks and to raise their own long term financing, the cost of capital will be so high as to make an otherwise economically viable source of power, commercially non-viable.

- *Need for focal point or "champion" for leading geothermal development*. Presently, responsibilities for geothermal development are scattered across a number of agencies – Mining Department of MEM, Energy Department of MEM, GST, TANESCO, private sector. It was suggested that a Geothermal Division be formed under the Energy Department of MEM and given lead responsibility for licensing geothermal fields to supporting exploration and in awarding sites for power project development. Private sector should have lead responsibility for power development. New legislation to support geothermal development should include this organizational change.

Group on Institutional Framework, Knowledge Management and M&E

19. ***Institutional Framework***. The stakeholders discussed both the existing needs and proposed additional activities to be considered under SREP:

- The SREP institutional framework must consider including other key ministries such as the Ministry of Water, and the Ministry of Natural Resources and Tourism;
- The SREP institutional framework must consider key academic institutions which conduct renewable energy trainings; an assessment of the Renewable Energy curricula in these academic institutions could be proposed to help designing training courses and offer diplomas which support renewable energy;
- MEM must emphasize building its internal capacity, especially for the geothermal subsector;
- The institutions representing the SREP Task Force should be part of a National Advisory Committee to advise MEM during SREP implementation. See the updated institutional framework in Annex 6.
- There is a need to strengthen the existing sector-wide M&E system, including reinforcing human capacity for M&E in MEM;[2] this will facilitate the implementation of the SREP M&E system. A SREP M&E focal point should be appointed to facilitate coordination at the sector level.
- There is a need for undertaking a baseline assessment of the data and information which will be used as reference for monitoring and evaluation. Group participants noted that information, though it is scattered, may exist and should be properly collected and reported.

20. ***Monitoring and Evaluation***. The MDB team had a discussion with M&E experts from MEM and REA. It was agreed:

[2] The existing sector-wide M&E unit is under the Planning and Policy Department of MEM and has only one dedicated staff. There is a need to develop capacity for staff in this unit, and to consider additional staff.

- The M&E MEM team needs to be strengthened in terms of human capacities; SREP will try to support this as part of the Investment Plan;
- In order to facilitate the implementation of the SREP M&E system, MEM shall nominate a staff who will be focal point for SREP M&E;
- MEM is updating its M&E framework; the Ministry may explore how they will integrate the SREP indicators in the overall sector-wide M&E framework;
- Before mid-April, the MEM/REA M&E team will make the necessary assessment for the baselines related to SREP indicators, including from the civil society and the private sector;
- The AfDB and World Bank M&E experts will support the MEM/REA M&E teams to strengthen their capacities in order to design and implement the SREP M&E system in the coming weeks and months.

21. ***Knowledge Management***. Shared learning and experience sharing were underscored as key components required for the creation of an enabling environment in designing and implementing the proposed renewable energy investments in Tanzania. Throughout the mission, the stakeholders expressed interest to learn from other companies in Tanzania that have already implemented projects in the proposed areas. They also expressed need to learn from other countries that have already started to implement the SREP Program (Kenya, Ethiopia and Mali) to learn from good practice, avoid repetition of mistakes and enhance replication of innovative ideas.

22. Various discussions during the workshop observed that Tanzania has had many studies and research conducted in the area of renewable energy by different institutions. However, the outcomes of these studies are stored on the shelves of the institutions and are seldom disseminated to the right stakeholders. Existing knowledge is thus not used productively to inform effective implementation of renewable energy in the country. In addition, inconsistency of renewable energy statistics was picked as one of the major challenge as different information is scattered in different institutions. This presents a risk of basing decisions on the wrong information rendering them ineffective. There is need to agree on what information to use as baseline in the proposed investments.

Annex 1: MDB Mission Members

African Development Bank (AfDB)

1	Florence Richard	Senior Climate Change Specialist
2	Stella Mandago	Senior Energy Officer
3	Umang Goswami	Private Sector Specialist
4	Anil Cabraal	Senior Consultant in Renewable Energy
5	Magdaline Nkando	Knowledge Management Specialist
6	Amel Makhlouf	M&E Specialist

World Bank (WB)

1	Dana Rysankova	Senior Energy Specialist
2	Stephanie Nsom	Energy Specialist

International Finance Corporation (IFC)

1	Pepukaye Bardouille	Senior Energy Specialist, Clean Energy
2	Murefu Barasa	Renewable Energy Specialist

Notes:

- DFID staff also participated in the mission, including Gareth Martin and Magdalena Banasiak
- CIF coordinators and Environmental & Social Specialists contributed from MDB HQs.

Annex 2: List of Stakeholders / Participants to the Mission Activities

SREP National Task Force

Last Name	First Name	Contacts
Ishengoma	Edward Leonard	Ass Comm. - Renewable Energy, MEM
Kabaka	Kato	Tanesco
Kiboko	Ng'anzi	EWURA
Masanyiwa	Mkoma	MEM
Mayalla	Jacob	MEM
Mbawala	Anastas	EWURA
Mgejwa	Ngereja	MEM
Mkumbo	Elineema	REA
Mnjokava	Taramaeli	GST
Mtepa	M'Safiri	EWURA
Ngamlagosi	Felix	EWURA
Nyamo-hanga	Gissima	REA
Rwelengera	Vestina	REA

Development Partners

Last Name	First Name	Institution
Al Fayadh	Samer	Embassy of Sweden
Banasiak	Magdalena	DFID
Geir	Hermansen	NORAD
Helgason	Árni Helgi	ICEIDA
Hirsch	Stephen	USAID/USEA/GEA East Africa Geothermal Partnership
Martin	Gareth	DFID
Ochmann	Norbert	BGR / German Cooperation
Sampablo	Marcos	EU delegation
Shimakawa	Hiroyuki	JICA
Stephen	Mwakifwamba	SIDA
Tachibana	Eisuke	JICA
Teklemariam Zemedkun	Meseret	UNEP

Annex 3: List of People attending the SREP Consultation Workshop

	NAME	ORGANIZATION	E-MAIL ADDRESS
1.	Edward Ishengoma	Assistant Commissioner, Renewable Energy, MEM	e_leonardishe@yahoo.co.uk]
2.	Dana Rysankova	World Bank	drysankova@workbank.org
3.	Ms. Mandisa Mashologu	Deputy Country Director, UNDP	Mandisa.mashologu@undp.org
4.	Focus Mrosso	CRBD Bank PLC	fmrosso@crdbbank.com
5.	Shenif Peera	Stanbic Bank Tanzania	peeras@stanbic.com
6.	Mnjokava T.T	Geological Survey of Tanzania	mnjott@yahoo.co.uk
7.	Stephen Mwakifwamba	SIDA	Stephen.Mwakifwamba@foreign.ministry.se
8.	Arbogast Oiso	First Energy Ltd	aoiso2003@yahoo.com
9.	Jacob Mayalla	Ministry of Energy and Minerals	jobmayalla@yahoo.co.uk
10.	Dr. I. Legonda	COET-UDSM	legondaia@gmail.com
11.	Gareth Martin	DFID	g.martin@dfid.gov.uk
12.	Julia Hug	Green Resources	Julia.hug@greenresources.no
13.	Abdallah Mandwanga	NDC	asmandwanga@yahoo.com
14.	Umang Goswami	AfDB	U.GOSWAMI@AFDB.ORG
15.	Amel Makhlouf	AfDB	A.MAKHLOUF@AFDB.ORG
16.	Florence Richard	AfDB	F.QUINTANILHA@AFDB.ORG
17.	Magdaline Nkando	AfDB	M.NKANDO@AFDB.ORG
18.	Gov Grey	Stanbic Bank	mgimwag@stanbic.com
19.	Stephanie Nsom	World Bank	snsom@worldbank.org
20.	Pep Bardouille	IFC	pbardouille@ifc.org
21.	Chris Greacen	World Bank	chrisgreacen@gmail.com
22.	Kevin McCown	USAID	kmccown@usaid.gov
23.	Eng. A.P. Mbawala	EWURA	mbawala@ewura.go.tz
24.	Emmanuel Kasanga	TANESCO	Emmanuel.kasanga@tanesco.co.tz
25.	Dorothec Sawall	TAREA	Dorothec.sawall@gmail.com
26.	Kato Kabaka	SREP Task Force	Kato.kabaka@tanesco.co.tz
27.	Anil Cabraal	AfDB	RACABRAAL@MSN.COM
28.	Abraham Kilimo	Dar es Salaam Institute of Technology	asgkilimo@yahoo.com
29.	Eng. Kusekwa Mashauri.A.	Dar es Salaam Institute of Technology	Kusekwa_adam@yahoo.com
30.	Eng. James .L. Ngeleja	NEMC	jlngeleja@gmail.com
31.	Wilson Nkuzi	UBC LTD	Wilson.nkuzi
32.	David Ross	USAID/Statera Capital	DAVID@stateracapital.com
33.	Sabina Daati	TANESCO	sabinadaati@tanesco.co.tz
34.	Angela Mndolwa	Norton Rose	Angela.mndolwa@nortonrose.com
35.	Gissima Nyamo-Hanga	Rural Energy Agency (REA)	Bnyamo-hanga@rea.go.tz
36.	Marcos Sampeblo	EU, Advisor	Marcos.SAMPABLO-LAURO@eeas.europa.eu
37.	Magdalena Banasiak	DFID, Advisor	m.banasidi@dfid.gov.uk
38.	Machwa Kagodo	GEO WIND	mkagolwe@gmail.com
39.	Hiroyuki Shimakawa	JICA	Shimakawa.hiroyuki@jica.go.jp
40.	David Robertson	Eastern Africa Association	darobertsontz@gmail.com
41.	Dan Kasirye	IFC Tanzania	dkasirye@IFC.org
42.	Mike Gratwicke	Mwenga Hydro	mike@riftvalley.com
43.	Gyan Ranjan	Husk Power Systems	ranjan@huskpowersystems.com
44.	Nasreen Bhimani	Zara Solar LTD	zarasolar@yahoo.com
45.	Ian Brouwer	Netherlands Embassy	Dirk.ianbrouwer@minbuzan.com
46.	Edward Ishaja	MEM	e_leonardishe@yahoo.co.uk
47.	Finias Magessa	SNU	fmagessa@snuworld.com
48.	Obeth Mwingizi	SONGAS LTD	Obeth.mwingizi@songas.com
49.	Richard Stanley	Ngombeini Power LTD	hjs@stanley.tz.com
50.	Eisuke Tachibana	JICA	Tachibana.Eisuke@jica.go.jp

51.	Hudson Nkotagu	UDSM-Geology	nkotaguh@yahoo.com
52.	Jensen Shuma	TATEDO	Jensen.shuma@tatedo.org
53.	Francis Songela	Mapembas HEP	fsongela@hotmail.com
54.	Jayce Kaiser	ALDWYCH ITL	JKAISER@ALDWYCH-INTERNATIONAL.COM
55.	Paul .M. Kiwele	MEM	morispak@yahoo.com
56.	Leornard Pesambili	TATEDO	Pesambili2001@yahoo.com
57.	Sylvester Mwambije	ENVOTEC	envotec@gmail.com
58.	Steve Thorne	Technical Advisor, MEM	steve@southsouthnorth.org
59.	Ng'anzi Kiboko	EWURA	kiboko@ewura.go.tz
60.	Rashid Shanti	WIND EA	rashidshanti@6telecoms.co.tz
61.	Fabio De Pascale	Devergy	Fabio@devergy.com
62.	Murefu Barasa	IFC	murefu.barasa@camcocleanenergy.com
63.	Dr. Michael Kraml	GPT	kraml@geo-t.de
64.	Taramaeli Mnjokava	GST	
65.	Amandeer Pansar	SLS Group	Apansar@slsprojects.com

Annex 4: Workshop Program

Time	Activity	Who?
9.00-9.10am	Opening and welcome remarks	MDB Representative: AfDB Resident Representative
9.10-9.20am	Official opening	PS/Minister for Energy
9.20-9.30am	Introduction and overview of the workshop	Workshop Chair
9.30-9.50am	Presentation on SREP concept SESSION 1	Florence Richard Senior Climate Change Specialist, AfDB
9.50-10.15am	Presentation on the state of energy sector in Tanzania: Issues, bottlenecks, renewable energy potential, findings SESSION 2	SREP National Focal Point Mr. Edward Leonard Ishengoma, Assistant Commissioner, Renewable Energy, Ministry of Energy and Minerals
10.15-11.00am	Moderated Q & A	Moderator
11.00-11.30am	**Coffee Break**	**All Participants**
11.30am-12pm	Presentation on key proposed investments under SREP (justification, proposals under each investment, institutional arrangements) SESSION 3	SREP National Focal Point Mr. Edward Leonard Ishengoma, Assistant Commissioner, Renewable Energy, Ministry of Energy and Minerals
12-1.00pm	Moderated Q & A	Moderator
1.00-2.00pm	**Lunch Break**	**All Participants**
2.00-3.00pm	Thematic Focused Group Discussions 1. Geothermal 2. Mini-grid 3. Capacity building & Knowledge Management 4. Monitoring & Evaluation, and strengthening of institutional framework	Moderator (nominated)
3.00-4.15pm	Plenary to interrogate outcomes of the Focused Group Discussions	Moderator (nominated)
4.15-4.30pm	Wrap up & Closure	SREP National Focal Point
	Coffee Break & Networking	**All Participants**

Annex 5: List of Participants to the Geothermal Workshop

"GEOTHERMAL NOW" WORKSHOP
13 March 2013
ATTENDANCE SHEET

	NAME	ORGANIZATION	SIGNATURE	MBEYA TRIP Y/N
1	Michael Solzer	SWECO		N
2	Chragwile S. A	MEM (NEI)		
3	Stephen Mwakifamba	Emb of Sweden		N
4	Enrique Lima	JICA - WESTJEC		N
5	CYRUS KITHINJA	SUMITOMO CORP		
6	Makoto Nakano	Marubeni Corporation		N
7	GILLIARD MARBAI	JUBILEE INSURANCE		N
8	CDE MYAKOBELA	AECOM		N
9	Kenulambe Kafanabo	EWURA		
1	[illegible]	[illegible]		
10	Teresia Mhagama	MEM		

"GEOTHERMAL NOW" WORKSHOP
13 March 2013
ATTENDANCE SHEET

	NAME	ORGANIZATION	SIGNATURE	MBEYA TRIP Y/N
11	[illegible]	[illegible]		N
12	Daniel[illegible]	BHC		N
13	MUWAKA	ABB		
14	MRAMBA	TANESCO		N
15	Samer Fayadh	Emb of Sweden		N
16	Lindsay Bissm	Clyde & Co		N
17	PETER KASANDA	CLYDE & CO		
18	Martin Schubert	WPW		
19	Silas Simiyu	GDC		N
20	Shaban Idissa	TANESCO		Y
21	GARETH MARTIN.	DFID.		Y

"GEOTHERMAL NOW" WORKSHOP
13 March 2013
ATTENDANCE SHEET

	NAME	ORGANIZATION	SIGNATURE	MBEYA TRIP Y/N
22	PALSSON	ICEIDA		N
23	Helgason	"		NO.
24	David Gaclow	GSC		
25	Mesfin T. Mamo	UNEP		
26	Clara Makenya	UNEP		NO.
27	Flavia Okanya	GDC		
28	Jacinta Tocha	GDL		
29	Dhamini Mkanyoka	MEM		
30	Steve Hirsch	USAID/USTDA		
31	Horst Kreuter	GeoT/GPT		Yes
32	Cirilo Simonet	GPT		Yes

"GEOTHERMAL NOW" WORKSHOP
13 March 2013
ATTENDANCE SHEET

	NAME	ORGANIZATION	SIGNATURE	MBEYA TRIP Y/N
33	Magdalena Banasiak	DFID		N.
34	NICHOLAS ZERVOS	VERMA LAW		N
35	PROF B. RUTINWA	UDSM - LAW		
36	Norbert Kluma	IER		N
37	Jacob Mayalla	MEEM		
38	Edward Shenyom	MEM		
39	Emil Mayalla	MEM		
40	Ngalanzi J. Kiboko	EWURA		No
41	MSUYA POLINE	EWURA		NO.
42	KATO KABAKA	TANESCO		YES
43	MWESIGA MWESIGWA	TANESCO		YES

"GEOTHERMAL NOW" WORKSHOP
13 March 2013
ATTENDANCE SHEET

	NAME	ORGANIZATION	SIGNATURE	MBEYA TRIP Y/N
44	Aaron Nanyaro	TANESCO	[signature]	YES
45	Tachibana Eisuke	JICA	T. E	NO
46	Charles Mgana	Mitsubishi corp.	[signature]	NO
47	Charles Malagile	— " —	[signature]	No.
48	PM Kiwele	MEM	[signature]	NO
49	Nassra Hassan	Fortis x Attorneys	[signature]	No
50	Edwin Kasanga	Infratech Limited	[signature]	NO
51	JEAN MUJUMBA	UDSM - GEOLOGY	[signature]	
52	Eng. Alphonse Bikulamuchi	VPO - DoE	[signature]	
53	ERIC KACEJA	DOE	[signature]	

"GEOTHERMAL NOW" WORKSHOP
13 March 2013
ATTENDANCE SHEET

	NAME	ORGANIZATION	SIGNATURE	MBEYA TRIP Y/N
54	Aziz A. Abbu	NEMC		
55	Theresia Mcha	Netherlands Embassy		N
56	Zphania J. Lukiso	EWURA		
57	YOUSSEF AKFADLI	AFDB		Y

Annex 6: SREP Institution Framework